Submission of

NORTHERN NATURAL GAS COMPANY

Omaha, Nebraska

to the

ROYAL COMMISSION ON ENERGY

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Calgary, Alberta, Canada

Mr. Borden

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February , 1958

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SUBMISSION

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INTRODUCTION

Northern Natural Gas Company, a major integrated natural gas transmission company in the United States, respectfully submits this brief in the hope that it will assist the Commission in its study of some of the matters referred to it.

The information and data presented herein include a description of the natural gas operations of Northern Natural Gas Company over its 27 year history, an outline of the activities of the Company during the past 8 years evidencing its continuing interest in Canadian gas, a brief description of the development of the natural gas industry in the United States, and data respecting the growth of the Company's markets in the United States. Information relating to the exploration and production activities of the Company's producing subsidiary in the Province of Alberta is also included.

CHAPTER I

DESCRIPTION
OF
NORTHERN NATURAL GAS COMPANY

Northern Natural Gas Company, a corporation, with its head office in Omaha, Nebraska, U.S.A., is engaged in the production, transmission and sale of natural gas. It sells and distributes natural gas in the States of Kansas, Nebraska, Iowa, South Dakota and Minnesota, and is currently seeking authority to extend service into Wisconsin and North Dakota. These several states are sometimes hereinafter referred to as the Northern Plains States or Northern Plains area of the United States.

The Company, "Northern," was organized and commenced operations in 1930.

At the present time Northern, directly and through subsidiaries, owns, operates and maintains more than 11,500 miles of pipelines which extend from the gas producing States of Texas, New Mexico, Oklahoma and Kansas into the Northern Plains States where it delivers approximately 1 1/4 billion cubic feet of natural gas daily. A map showing the location of Northern's system is contained in its 1956 Annual Report to its stockholders, a copy of which is attached as Schedule A.

Northern is also authorized to transact business in the State of Montana and in the Province of Alberta.

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Northern presently supplies natural gas for 880,000 retail customers located in 587 communities in the Northern Plains area. Among the principal cities in this area being supplied natural gas by Northern

are Minneapolis, St. Paul, Rochester, Sioux City, Des Moines, Dubuque, Aberdeen, Sioux Falls, Lincoln and Omaha. In 1957 Northern sold approximately 350 billion cubic feet of gas to the communities and industries served from its pipeline system, nearly 3 1/2 times its sales 10 years ago. Additional data and information respecting Northern's present markets and projections and estimates of Northern's growth are set forth at Chapter IV hereof beginning at Page 14.

Northern's principal proved gas reserves are located in the Hugoton Field and adjacent areas of Kansas, Oklahoma and Texas, the West Panhandle Field of Texas and the Permian Basin area of west Texas and southeastern New Mexico. These reserves total approximately 12 trillion cubic feet.

Northern Natural Gas Producing Company, a wholly-owned subsidiary, is engaged in the exploration for, and production of, gas and oil. At the present time operations are being conducted in the Province of Alberta and in the States of Montana, North Dakota, South Dakota, Nebraska, Colorado, Utah, New Mexico, Texas, Kansas, Oklahoma and Arkansas. This subsidiary is also authorized to transact business in the States of Arizona, Louisiana, Oregon, Washington and Wyoming.

Permian Basin Pipeline Company, a subsidiary, is a natural gas pipeline company. It operates in Texas and New Mexico where it transports gas from numerous gas producing fields to a point in west central Texas where such gas is sold to Northern.

Another wholly-owned subsidiary, Northern Plains Natural Gas Company, is authorized to transact business in the States of Montana, North Dakota, Minnesota, Wisconsin, South Dakota, Iowa and Nebraska.

Peoples Natural Gas, formerly a separate and wholly-owned subsidiary company, is now operated as a division of Northern. It distributes natural gas at retail in 110 communities and to numerous industrial plants in the States of Minnesota, Iowa, Nebraska and Kansas. It also holds franchises authorizing the distribution of natural gas in 118 additional communities in these states.

The net assets of Northern and its subsidiary companies exceed $430,000,000. Its consolidated total capitalization consists of approximately $220,000,000 funded debt, $44,000,000 preferred stock and $135,000,000 common stock equity. Northern's own funded debt ($195,000,000) consists entirely of unsecured debentures; it has no pipeline mortgage bonds. Its 4,000,000 shares of outstanding common stock are listed on the New York and Midwest Stock Exchanges and are held by approximately 19,000 stockholders residing in all 48 states, Canada, and several other countries. No single stockholder holds more than 3 per cent of Northern's outstanding common stock.

Additional financial statistics, a balance sheet and an income statement, all as of December 31, 1956, are contained in Schedule A. The statistical data set forth at Pages 26 and 27 of Schedule A detail Northern's growth since 1930.

Northern's 1957 Annual Report to stockholders will be issued in March of 1958 and a copy thereof will be filed if the Commission so desires.

CHAPTER II

NATURE AND EXTENT OF NORTHERN'S INTEREST IN CANADIAN NATURAL GAS

Because of its economic and geographic proximity, Northern has had a continuing interest in the natural gas reserves of Alberta since the magnitude of such reserves was first recognized. This interest has coincided with the rapidly increasing demands for natural gas which have persisted in Northern's market area since World War II.

Negotiations and Activities Respecting Purchase of Canadian Gas

In 1950 Northern commenced negotiations with Gulf Oil Company and others for the purchase of gas from the Pincher Creek area in Alberta.

On October 22, 1951, Northern and Western Pipe Lines, (a corporation incorporated by Private Act of the Parliament of Canada and hereinafter referred to as "Western") executed a contract providing for the sale and delivery by Western of from 100 to 250 million cubic feet of gas per day to Northern at the International border south of Winnipeg.

In 1951 hearings were held before the Alberta Petroleum and Natural Gas Conservation Board on Western's application to export gas from Alberta. Mr. J. F. Merriam, President of Northern, and other officials of the Company appeared at these hearings in support of Western's application and presented evidence respecting the gas market

in the Northern Plains area of the United States.[1/]

Following the merger of Western and Trans-Canada Pipe Lines Limited (Trans-Canada), Northern's officials presented additional evidence before the Alberta Board in 1953 and 1954 respecting Northern's existing and potential market.[2/] The report of the Alberta Board dated May 10, 1954, made reference to the use of Alberta gas "to supply United States markets through the facilities of Northern Natural Gas Company," and on May 14, 1954, Trans-Canada was issued a permit to export gas from Alberta.

On September 16, 1954, Northern and Trans-Canada executed a contract which provided for the delivery by Trans-Canada of 150 million cubic feet of gas per day to Northern at the International border south of Winnipeg, near Emerson, Manitoba.

Hearings on Northern's proposal to import Canadian gas from Trans-Canada were held before the Federal Power Commission in Washington, D. C. beginning early in January, 1955. Although Trans-Canada presented evidence in support of Northern's application, the plans of Trans-Canada respecting financing, gas purchase contracts and contracts for the sale of gas in Canada were not complete at that time and, for these reasons, the hearings were not concluded, but were recessed at the end of January.

1/ Before The Alberta Petroleum and Natural Gas Conservation Board, In The Matter Of A Joint Hearing To Determine Various Questions Relating To The Proposed Export Of Natural Gas From The Province Of Alberta, 1951, Volume 32, Pages 3015-3039; 3083-3091; 3120-3148, December 12, 1951.

2/ Before The Alberta Petroleum And Natural Gas Conservation Board, In The Matter Of A Joint Hearing, supra, note 1 above, 1953, Volume 21, Pages 1486-1498, Volume 22, Pages 1510-1559, July 13-14, 1953; and 1954, Volume 47, Pages 3483-3499, March 24, 1954.

At that time it was contemplated that Trans-Canada's plans would soon be perfected and the Federal Power Commission hearing resumed.

On June 3, 1955, Trans-Canada, following negotiations with Tennessee Gas Transmission Company (Tennessee), notified Northern of its termination of the September 16, 1954, agreement.

Because it was learned that delivery of an interim supply of gas from the United States into eastern Canada might be a consideration affecting Canadian policy respecting the export of Canadian gas into the Northern Plains area of the United States, Northern and two other pipeline companies, on July 21, 1955, offered (1) to purchase from Trans-Canada at the Canadian border south of Winnipeg such quantities of natural gas as were available, (2) to deliver, simultaneously, such volumes of natural gas to eastern Canada as were required by those markets and supported by the deliveries south of Winnipeg, and (3) to purchase for sale in United States markets, the volumes of gas not required for delivery to eastern Canada. This proposal was not accepted by Trans-Canada.

On August 11, 1955, Trans-Canada and Tennessee executed an agreement whereby Tennessee would purchase from Trans-Canada 200 million cubic feet of gas per day at the International border near Emerson, Manitoba. Tennessee subsequently assigned this portion of the agreement to Midwestern Gas Transmission Company.

The August 11, 1955, agreement further provided for the delivery of natural gas by Tennessee to Trans-Canada at the International border in eastern Canada, to meet the peak requirements of Trans-Canada's customers in eastern Canada. This arrangement, as subsequently amended

and disclosed in proceedings before the Federal Power Commission,[3/] was to continue for a period of 3 years or, at Trans-Canada's option, until the main Trans-Canada pipeline was completed for delivery of Alberta gas to eastern Canada. Trans-Canada also had the option to increase the contract term to 20 years. No steps have been taken to effectuate this arrangement and apparently it has been abandoned by both parties. Trans-Canada recently has made other arrangements for the gas currently needed by it in eastern Canada and Tennessee recently stated that it is "very doubtful if Tennessee will ever furnish any gas for the Montreal market."[4/]

Northern has continued to evidence its interest in Canadian gas. On May 28, 1957, Northern's president testified before the Federal Power Commission as follows respecting Canadian gas:

> "Q Mr. Merriam, will you state what is Northern's policy respecting the purchase of Canadian gas from Midwestern Gas Transmission Company?
>
> "A Subject to the Federal Power Commission's approval with respect to terms and conditions of contracts, Northern would be willing to buy gas from Midwestern Gas Transmission Company at either the Canadian border at Emerson, or at a point near Grand Forks to take the gas into Northern's system, all of the Canadian natural gas that Midwestern is authorized by the Federal Power Commission to import, and Northern would be willing to accept from the Federal Power Commission a certificate authorizing such gas purchased and the construction of the connecting facilities and service of the intervening markets.
>
> "Q Mr. Merriam, what is Northern's policy respecting the purchase of gas from Trans-Canada Pipelines?

3/ Federal Power Commission, Docket No. G-9449, Exhibit Nos. 51, 217 and 218.

4/ Federal Power Commission, Docket Nos. G-2306 et al., Transcript Page 12,228, October 11, 1957.

"A Northern would be willing to purchase gas from Trans-Canada if it were free to sell it to Northern under the contract of September, 1954, which is Exhibit 63, I believe, in this consolidated docket, or under terms and conditions similar to that referred to for the purchase of gas from Midwestern at the Canadian border, near Emerson."5/

This testimony was confirmed by Mr. Merriam before the Federal Power Commission on December 2, 1957.6/

Exploration and Production Activities in Canada

Since 1951 Northern, through its producing subsidiary, has actively participated in the development of Albertan gas reserves through significant exploratory and drilling activities.

In 1952 Northern acquired an interest in 78,000 acres in the Savanna Creek area and commenced drilling a well on this acreage. To date 3 successful wells and one dry hole have been completed in this field and 3 additional wells are being drilled.

Since 1952 Northern has acquired acreage in a number of other producing and prospective areas and at the present time holds interests such as leases, reservations and options, which permit exploration activities covering 150,000 acres. The fields or prospective gas areas in which reservations or leases are held include Provost, Kennedy Creek, Wild Horse, Priddis and Pekisko. Northern is also producing oil from wells drilled by it in the Pembina and Westward Ho fields.

5/ Federal Power Commission, Docket Nos. G-2306, et al., Transcript Pages 1763-64, May 28, 1957.

6/ Federal Power Commission, Docket Nos. G-2306, et al., Transcript Pages 16,887-16,888, December 2, 1957.

Northern currently has over $9,000,000 invested in oil and gas properties in southern Alberta and, like other producers in Alberta, is keenly interested in the development of appropriate export markets. Northern has contracted to sell gas from its Savanna Creek reserves to Westcoast Transmission Company Limited. This contract also provides that, when the volumes available to Westcoast from sources in southern Alberta total 300 million cubic feet per day, Northern may purchase from Westcoast the next 200 million cubic feet per day that Westcoast acquires.

CHAPTER III

BRIEF HISTORY OF THE NATURAL GAS INDUSTRY IN THE UNITED STATES

A brief history of the growth and development of the natural gas industry in the United States is included in this submission in the hope that such information will be helpful to the Commission.

Prior to 1925 the natural gas industry was essentially confined to the local production and marketing of natural gas. The technology of long distance, high pressure transmission of natural gas had not yet been fully developed. Because markets for natural gas were small and competition for reserves was limited, prices in the fields were depressed. In 1925 estimated U.S. gas reserves totaled 23 trillion cubic feet, 3,500,000 customers in 23 states were being supplied with natural gas and 1 trillion cubic feet were consumed in that year.[7/]

The initial construction of what are now known as the "long lines" began in the late 1920's coincident with the perfection of the manufacture of steel pipe capable of transporting gas for long distances at high pressures. By 1940 the initial long distance pipelines that now serve Memphis, New Orleans, Atlanta, Birmingham, Chicago, St. Louis, Kansas City, Omaha, Denver, Minneapolis, Detroit, the Appalachian industrial center and southern California had been constructed. In 1940 estimated U. S. gas reserves totaled 85 trillion cubic feet, 7,500,000

7/ Statistics from Federal Power Commission Natural Gas Investigation, Docket No. G-580, Pages 45 and 238 (Smith-Wimberly Report).

customers in 34 states were being supplied and 2 3/4 trillion cubic feet were consumed for all uses in that year. 8/

Except for the construction of a pipeline from the Gulf Coast area of Texas to serve as a supplementary supply for the Appalachian industrial centers of Pittsburgh, Cleveland, Columbus and Cincinnati, major long distance pipeline construction and expansion were at a virtual standstill during World War II.

Immediately following World War II and continuing until the present time there has been a vast and vigorous expansion of pipeline construction and natural gas service. Natural gas is now supplied in 46 of the 48 states. Reserves are obtained in 23 producing states and from Canada and Mexico. At the end of 1956 U. S. gas reserves totaled approximately 238 trillion cubic feet, over 10 trillion cubic feet were consumed for all uses and 25,000,000 consumers utilized natural gas. 9/ More than 489,000 9/ miles of transmission and distribution pipelines are currently in operation powered by over 5 1/2 million 10/ compressor horsepower. By 1956 total plant investment in transmission and distribution facilities exceeded $13,800,000,000. Industry-wide operating revenues totaled $5,400,000,000; funded debt was in excess of $6,000,000,000 and common stock equity exceeded $2,400,000,000. 9/

In the period 1925 through 1957 comprehensive regulation of the natural gas business has been enacted at both state and federal

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8/ Statistics from Gas Facts, 1951, published by the Bureau of Statistics, American Gas Association, Tables 7, 27, and 67.

9/ Statistics from Gas Facts, 1956, Tables 2, 17, 47, 77, 179, 184 and 186.

10/ Statistics of Natural Gas Companies, 1956, published by the Federal Power Commission.

levels. State regulation has been principally concerned with production and production practices in the field and with the regulation of the price of natural gas at the consumer burner tip. Federal regulation was first invoked in 1938 (the Natural Gas Act) and was concerned with the operations of the long distance, interstate transmission pipelines. This regulation, as amended, encompasses the construction and operation of facilities involved in the transportation of natural gas in interstate commerce, pipeline sales of gas in interstate commerce for resale (wholesale sales) and the rates at which such sales are made.

The recent decision of the Supreme Court of the U. S. in Phillips v. Wisconsin, 347 U.S. 672, has extended federal regulation to all sales in interstate commerce for resale, whether made by the producer or the interstate pipeline transporter.

State regulation of production and production practices encompasses such matters as: prevention of waste, prohibition of flaring, proration, ratable take, gas oil ratios, and well spacing.

There is no federal regulation of the "end use" of natural gas. Nor has any federal regulation been enacted which integrates natural gas into any overall, comprehensive scheme of control of all U. S. energy resources. Natural gas has been and remains free to compete with coal, oil and hydro-electric power. Today natural gas provides over 25 per cent of the total energy fuels used in the U. S. [11]

11/ Gas Facts, 1956, Table 14.

CHAPTER IV

NORTHERN'S MARKETS

General

The market Northern presently serves is located in the Northern Plains States of Kansas, Nebraska, Iowa, Minnesota and South Dakota. Northern currently proposes to extend service to additional markets in North Dakota and Wisconsin. The population of this market area is approximately 7,500,000 persons of whom 1,500,000 live in the Minneapolis-St. Paul metropolitan area.

The region is one of the most productive agricultural areas in the United States. Its main products include corn, wheat, other small grains, livestock and dairy products. The principal agriculture-based industries include meat packers, millers of sugar, flour and cereal, creamery and produce houses as well as a large variety of frozen and canned food processors. Over 26 per cent of the United States meat and over 36 per cent of its small grains crops are produced in the area.

The area has natural resources that form the basis for a manufacturing industry that holds a significant position in the national economy. This manufacturing industry at the present time contributes almost as much to the regional economy as does agriculture. The principal industries in this area produce electric power, cement, gypsum products, building materials, ceramics, farm implements, chemical fertilizer, glass products, iron ore and paper. Over 100 Industrial Development Corporations have been organized in this area and are actively developing

additional industrial and economic growth in the region.

Thus, the broad agricultural base of this area, coupled with its strong and diversified manufacturing industry, provides this region with a sound and growing economy.

<u>Growth of Northern's Service in the Area</u>

The use of natural gas as a fuel has increased rapidly since Northern began its transmission operations in 1930. At the end of the first year of operations, Northern supplied the requirements of only 188,000 persons representing 18,000 total consumers. Due to increased product acceptance, more efficient transmission methods and continued expansion into new markets, at the year end 1957 Northern was supplying the requirements of 3,256,000 persons representing 880,000 consumers.

These consumers use natural gas for a wide variety of purposes. The residential and commercial consumer uses natural gas for cooking, water heating, refrigeration, incineration, clothes drying, space heating and air conditioning. Annual sales and system capacity required for these purposes have increased continuously since 1930. This is due not only to an increase in consumers but to the development of new and better gas burning appliances with resulting acceptance by the ultimate consumer.

The utilization of natural gas as an industrial fuel and raw material has experienced an appreciable technological advancement since 1930. As a fuel it is used in the production of electric energy, in meat packing plants, in dairy and food processing plants and in the manufacture of glass, rubber and paper products. In a different fuel applica-

tion, it is used in the manufacture of cement, brick and tile, and building materials. It is used in heat treating and metal fabrication such as the manufacture of farm implements and munitions. As a raw material, it is used in the manufacture of chemical fertilizer and in the production of helium.

Annual sales for industrial purposes also have increased continuously since 1930. These industrial sales, made during off-peak periods when the capacity of the system is not required for heating and other firm uses, permit Northern to operate at a high system utilization or load factor. During 1957 its system operated at over 80 per cent utilization factor. Total annual sales for Northern's system during 1957 amounted to 352 billion cubic feet. In order to attain these sales and satisfy the requirements of its consumers, Northern increased its system salable capacity 60 fold since 1930. Northern's historical growth in service is summarized in the following table:

	1930	1940	1950	1957
Total Annual Sales in MMcf	589	53,734	167,286	352,090
Daily Salable Capacity in MMcf - Beginning of Year	20	189	489	1,196
Population Served - Year End	188,000	1,654,000	2,379,000	3,256,000
Total Consumers - Year End	18,000	381,000	614,000	880,000
Consumers Using Gas for Space Heating - Year End	1,400	69,000	297,000	683,000
Space Heating Saturation - Year End	8%	18%	48%	78%

Market Expansion Program

Northern is continuing to implement its planned program of expanded service. Increases in daily capacity with corresponding growth in annual sales will result from increased service to the presently

served communities and to communities which have been proposed for service.

Northern's expansion programs as currently proposed will require, for the expanded system, a fifth year salable capacity of 1,849 million cubic feet per day. This capacity will provide service to 4.7 million persons representing 1,260,000 ultimate consumers. Approximately 83 per cent of these consumers will use natural gas for space heating purposes. The annual sales resulting from this projected service are estimated to be 534 billion cubic feet. The projected growth in service expected by Northern is summarized in the following table:

		Expanded System Market	
	Actual 1957	First Year	Fifth Year
Total Annual Sales in MMcf	352,090	446,000	534,000
Daily Salable Capacity in MMcf-Beginning of Year	1,196	1,465	1,849
Population Served - Year End	3,256,000	4,436,000	4,727,000
Total Consumers - Year End	880,000	1,119,000	1,260,000
Consumers Using Gas for Space Heating - Year End	683,000	862,000	1,040,000
Space Heating Saturation - Year End	78%	77%	83%

Further Considerations Bearing on Northern's Market

The area Northern serves is recognized as a high fuel cost area in the United States and is generally remote from the effects of inexpensive water borne transportation. Because of these facts and despite recent increases in natural gas wholesale rate levels, Northern's position in relation to the cost of fuels competitive with natural gas has been and is expected to remain favorable. This is particularly

true of those residential, commercial and industrial markets where the alternative fuel is oil or liquified petroleum gas. It is likewise true as respects coal, although admittedly in recent years there has been some narrowing of the price differential between coal and natural gas.

The cost of new capacity additions will materially affect Northern's ability to maintain and lengthen its current competitive advantage as respects other fuels. In this regard Northern has been most fortunate to have been able to develop a large underground storage field near the very heart of its system at Redfield, Iowa.

The operation of this storage reservoir has been fully tested for system use during the current winter season and Northern presently has pending before the Federal Power Commission an application authorizing the use of storage to provide increased system capacity.

The incremental cost of such a capacity addition is substantially below the cost required to provide the same capacity by constructing additional facilities throughout the length of Northern's system from west Texas to Minnesota.

By the same token the introduction of new Canadian gas supply at the Minnesota terminus of its system, close to its largest current market, will enable Northern to provide still further incremental system capacity at relatively lower cost.

CONCLUSION

The need for additional gas supplies for growth of existing service and for new markets, coupled with the need to replace the volumes consumed annually from its system, require Northern continually to seek additional sources of gas supply. Additionally, Northern's current cost advantage over competitive fuels, its high utilization factor and its ability to use underground storage are significant factors contributing to its ability to absorb and market substantial additional quantities of natural gas.

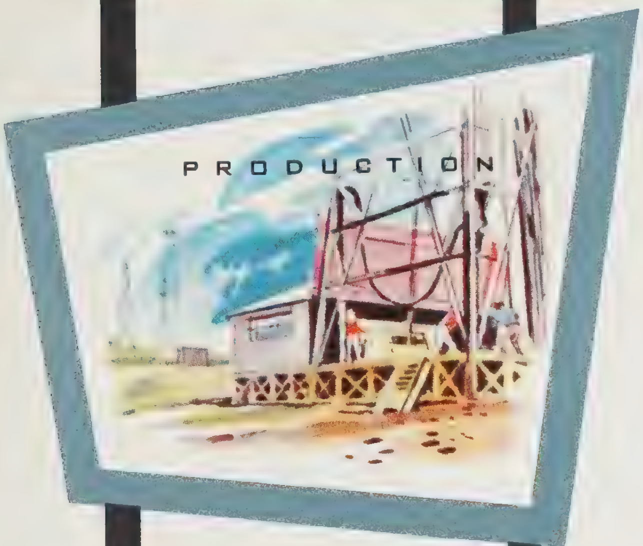
Favorable economics of the pipeline investment required to bring additional gas supplies to its markets result from the geographical location of the Alberta reserves in relation to Northern's existing system facilities. Further economies could be effected by system flexibility resulting from the location of sources of supply at each end of Northern's main transmission system. Therefore, as a part of its program to obtain reserves to support its system's growth, Northern has turned to Canadian gas as an economically advantageous source of supply.

The same factors of market economics and capital cost which prompt Northern to seek a Canadian source of supply provide to suppliers the economic advantages of utilization of Northern's facilities as a vehicle for bringing Canadian gas to substantial and growing markets in the United States.

Respectfully submitted,

John F. Merriam
President

NORTHERN NATURAL GAS COMPANY



Annual Report 1956

BOARD OF DIRECTORS

MARK H. ADAMS	Wichita, Kansas
ARTHUR D. HYDE	Minneapolis, Minnesota
JOHN F. MERRIAM	Omaha, Nebraska
MAX A. MILLER	Omaha, Nebraska
GLENN E. NIELSON	Cody, Wyoming
GUY E. REED	Chicago, Illinois
GILBERT C. SWANSON	Omaha, Nebraska

OFFICERS

JOHN F. MERRIAM	*President*
ASA B. DILWORTH	*Vice President & Controller*
JOE T. INNIS	*Vice President*
W. LARRY SHOMAKER	*Vice President*
JOHN M. HANLEY	*Vice President*
PHILLIP A. GASS	*Vice President*
RAY L. HARRISON	*Vice President*
MYRVEN L. MEAD	*Vice President*
BERCHEL H. HARPER	*Secretary*
HARRY H. SIERT	*Treasurer*
LAWRENCE I. SHAW	*General Counsel*

CORPORATE DATA

General Offices: 2223 Dodge Street, Omaha 1, Nebraska

Incorporated in the State of Delaware, April 25, 1930

Capital Stock:
5,000,000 Common shares, par value $10 per share, authorized
3,654,000 shares outstanding (listed on New York Stock Exchange)

Transfer Agents: The United States National Bank of Omaha
Chemical Corn Exchange Bank, New York

Registrars: The Omaha National Bank, Omaha
The Hanover Bank, New York

750,000 Preferred shares, par value $100 per share, authorized

250,000 shares 5½% cumulative outstanding (listed on New York Stock Exchange)

Transfer Agents: The United States National Bank of Omaha
The Chase Manhattan Bank, New York

Registrars: The Omaha National Bank, Omaha
The First National City Bank of New York

Auditors: Arthur Andersen & Co., Omaha, Nebraska

This report and the statements contained herein are submitted for the general information of the stockholders of the Company as such, and are not intended to induce, or for use in connection with, the sale or purchase of securities.

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THE PRESIDENT'S LETTER

To the stockholders
of Northern Natural Gas Company:

It is a pleasure to bring you our annual review of the progress being made by your company. We feel that in 1956 good progress was made.

Earnings per share reached a new high in 1956 of $3.60, after downward adjustment for estimated rate case refunds. This compares with $3.20 per share earnings in 1955, comparably adjusted. (The per share earnings figure for 1956 referred to, is 17¢ per share less than the net income shown in the earnings statement on Page 7. This is because the adjustment for rate refunds will not be reflected in the earnings statement until final figures are available.)

As we have previously reported, our improved earnings position and other factors permitted increase of the dividend rate in the third quarter of 1956 to 65¢ per share, from the previous 55¢ rate. Dividends for the year therefore totalled $2.40 per share, while the indicated annual rate went to $2.60 per share.

Our strong gas supply picture was further enhanced in 1956 by the addition of nearly 1.5 trillion cubic feet of gas reserves. This brings Northern's total gas reserves to a new high of over 10 trillion cubic feet at the end of the year.

Exploration activities were increased, and for the first time the expenditures exceeded funds generated by our producing subsidiary from revenues and operations, and funds of Northern were directly expended for exploration in addition to the producing company's own funds. Testing for deep gas under our Hugoton Gas Field leases was initially unsuccessful, but will be continued. Our Savanna Creek Field in Alberta improved its outlook by completion of the third gas producing well, giving promise of the development of a major field, of which we own 32.5%.

Diversification activities were commenced in a modest way with the drilling of two producing oil wells in Alberta, while after the end of the year additional oil leases in proven areas in Alberta were purchased. A number of studies of further diversification activities are under way.

Our underground gas storage project was successfully operated during the winter months, with up to 40 million cubic feet per day of gas being withdrawn on a number of successive days. Over 5 billion cubic feet have been injected and stored in the formation to date. We are quite optimistic as to the further successful and increased operation of the storage project. It is anticipated that the original goal of 50 billion cubic feet of gas storage, and use of daily volumes of 200 million cubic feet will be equalled or exceeded as the project is developed.

Our $54 million construction program for 1956 was completed as scheduled. This brought service to 28 new communities in the Northern Plains area, in addition to continuing to meet the entire requirements of our present markets. Aberdeen and other major cities in eastern South Dakota received natural gas service for the first time as a result of our construction program.

No permanent financing was required in 1956 to provide funds for the new facilities. Short term bank loans of $19 million were obtained, which will be retired by the issuance of additional long term debentures.

A manpower development program was inaugurated during the year under the supervision of a management consulting firm. Under the program, evaluation of key men is carefully made and individual training programs developed to permit maximum utilization of capabilities. This permits long range planning for upgrading, developing and obtaining key men for management positions. The program has already proven very effective and we are satisfied that considerable and increasing value will accrue to the company.

Future Outlook Continues Good. A construction program for 1957 approximating $63 million has been authorized by the Directors and application is being made to the Federal Power Commission for authorization of the regulated portions of the program. Plans include service to over 200 new communities, in addition to meeting all the requirements of our present markets. This continues our long range program of orderly expansion of service to new communities in the Northern Plains. We continue to be strong believers in the growth prospects of the Northern Plains area, both from a population and an industrial standpoint. We have been actively working to stimulate and aid this growth, along with the other utilities and companies who with Northern live in and serve the Northern Plains area.

Financing of the 1957 program is being reviewed at this time. It is anticipated that it will consist primarily of debentures and preferred stock with the possible issuance of some common stock.

Because of foreseeable increases in expenses, we filed a rate increase request with the Federal Power Commission for $6 million in February of 1957 to protect our earnings position.

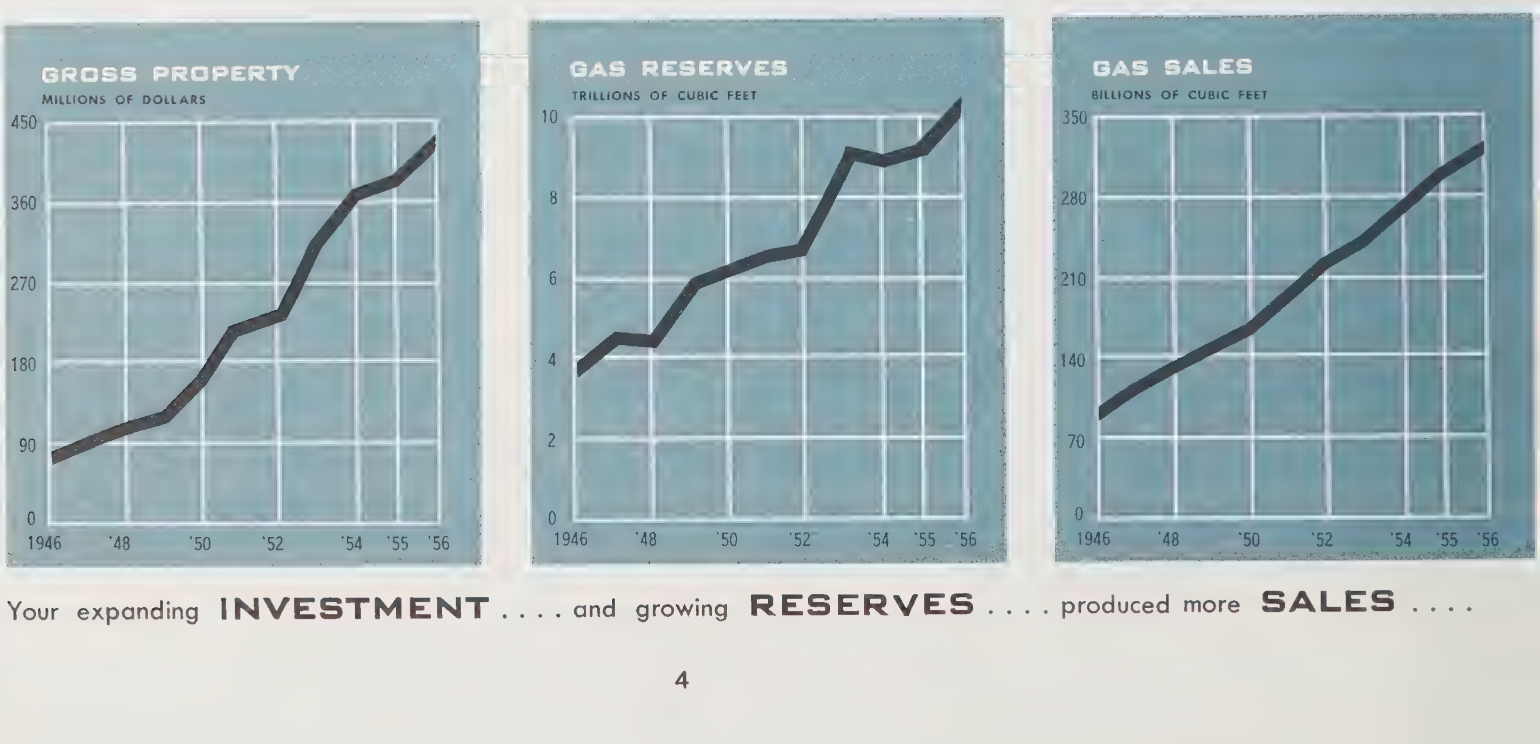
The 1957 program again includes proposed service to the Duluth-Superior markets. We still have the branch line pipe on the ground, and can serve the markets sooner, more economically, and better than anyone else. We would have provided this service in 1956 except for delays occasioned by the competitive application of Tennessee Gas Transmission Company's affiliate, Midwestern Gas Transmission Company.

The hearings before the Federal Power Commission on this marketing conflict are still pending. They are now involved in a long series of dockets before the Commission involving a number of other pipelines, the Chicago markets, the Detroit and Wisconsin markets, and the markets of Tennessee Gas in addition to the Trans-Canada Pipelines project. No daylight is visible at this time in the termination of these complicated proceedings. We and the other two pipelines whose market areas would also be adversely affected by the Tennessee Gas-Midwestern Gas project did meet twice with Tennessee Gas to discuss settlement of the controversy. We and the other two pipelines offered to join Tennessee in a four-way equal ownership of Midwestern Gas Transmission Company with independent operation of such company and purchase of all Midwestern's gas by the three marketing companies. Tennessee Gas was however unwilling to consider anything involving surrender of its control of the stock of Midwestern and of its operation, and also insisted on other unworkable conditions.

Northern's proposal to build its own pipeline from Alberta to take its own and other gas into Northern's system has been held up in view of the complicated Canadian gas picture resulting from the pendency of the Trans-Canada Pipelines' project.

Natural Gas Act Amendment. Presidential veto in 1956 of the proposed Natural Gas Act Amendment designed to make Federal regulation of the production of natural gas more workable was a disappointment. It is hoped that satisfactory new legislation can be developed that will result in the maximum reasonable encouragement to the producer so that necessary long range development of natural gas supplies will accrue to the benefit of the consumers.

Your Company's Record of Growth 1946-1956



Your expanding **INVESTMENT** . . . . and growing **RESERVES** . . . . produced more **SALES** . . . .

At the end of the year one of your Directors who had served for eight years resigned. This was Mr. Farrar Newberry who had retired as President of The Woodmen of the World Life Insurance Company in Omaha the previous year and had asked to be relieved of his responsibilities with Northern in view of his retirement from the business field.

To replace Mr. Newberry as a director we were fortunate to obtain Mr. Gilbert C. Swanson of Omaha. Mr. Swanson, with his brother and father, built up the C. A. Swanson business to its strong national position at the time of its sale to Campbell Soup Company in 1955. Mr. Swanson continues as President of the C. A. Swanson Division of Campbell Soup Company and is a Vice President of the latter company. He has been active in many business and civic fields and should make a substantial contribution to Northern.

I wish at this time to express to the stockholders the appreciation of all of us who work for Northern, for the opportunity extended to us by the stockholders to become further owners of the company stock through the Stock Purchase and Stock Option plans authorized by the stockholders in 1956.

FOR THE BOARD OF DIRECTORS

John F. Merriam

President.

Omaha, Nebraska.
Dated February 18, 1957.

generating greater **REVENUES** . . . providing added **PROFITS** . . . and increased **EQUITY**.

CONSOLIDATED FINANCIAL POSITION

Northern Natural Gas Company and Subsidiaries

	December 31, 1956	December 31, 1955
Assets		
GAS PLANT, at original cost	$426,434,433	$381,966,482
Less: Reserves for depreciation and depletion	88,783,290	76,185,710
	$337,651,143	$305,780,772
INVESTMENTS in common stock of Husky Oil Company (125,000 shares) and Canadian Husky Oil Ltd. (50,000 shares), at cost	$ 1,050,000	$ 1,050,000
CURRENT ASSETS:		
Cash	$ 9,564,315	$ 8,284,551
United States Government securities	1,498,247	17,918,577
Receivables, less reserve for uncollectibles	11,903,268	11,943,181
Materials and supplies, at average cost	6,520,347	4,349,029
Prepayments and other	385,777	837,388
	$ 29,871,954	$ 43,332,726
DEFERRED CHARGES:		
Debt discount, premium and expense, in process of amortization	$ 516,859	$ 628,790
Other	342,528	540,884
	$ 859,387	$ 1,169,674
	$369,432,484	$351,333,172
Liabilities and Capital		
COMMON STOCK—authorized 5,000,000 shares, par value $10 per share; 3,654,000 shares outstanding	$ 36,540,000	$ 36,540,000
PREMIUM ON COMMON STOCK ($38,534,518), less common and preferred stock expense	37,130,689	37,130,689
RETAINED EARNINGS (restricted under debenture provisions to the extent of $19,685,551 against the payment of cash dividends) (Note 1)	38,966,149	33,939,943
Total common stock equity	$112,636,838	$107,610,632
MINORITY INTEREST in Permian Basin Pipeline Company common stock	1,470,484	1,377,097
PREFERRED STOCK (see page 16)	29,322,500	29,550,000
FUNDED DEBT (see page 16)	173,775,000	184,417,000
Total capitalization	$317,204,822	$322,954,729
Less current redemption requirements of preferred stock and funded debt	7,819,500	7,169,500
Total capitalization, less current redemption requirements	$309,385,322	$315,785,229
CURRENT LIABILITIES:		
Redemption requirements of preferred stock and funded debt	$ 7,819,500	$ 7,169,500
Notes payable to banks	18,750,000	—
Accounts payable	8,282,182	5,351,838
Accrued taxes	15,203,526	16,059,710
Other	5,399,622	3,651,858
	$ 55,454,830	$ 32,232,906
OTHER CREDITS:		
Deferred credits	$ 15,984	$ 130,547
Deferred Federal income taxes	2,719,100	1,512,700
Insurance reserves	957,326	854,501
Contributions in aid of construction	899,922	817,289
	$ 4,592,332	$ 3,315,037
	$369,432,484	$351,333,172

The accompanying notes are an integral part of these statements.

CONSOLIDATED RESULTS OF OPERATIONS AND RETAINED EARNINGS

Northern Natural Gas Company and Subsidiaries

	Years Ended December 31,	
Operations	*1956*	*1955*
Operating Revenues:		
Gas sales	$108,790,655	$103,696,216
Other	4,219,600	3,842,805
	$113,010,255	$107,539,021
Operating Expenses and Taxes:		
Gas purchased	$ 34,869,789	$ 32,390,902
Operation	20,104,407	17,903,439
Maintenance	3,515,262	3,558,736
Depreciation	13,233,200	12,913,300
Depletion	151,000	137,000
Taxes, other than taxes on income	4,470,039	4,526,799
Taxes on income	15,740,600	15,424,300
	$ 92,084,297	$ 86,854,476
Net operating income	**$ 20,925,958**	**$ 20,684,545**
Other Income	279,546	219,947
Gross income	**$ 21,205,504**	**$ 20,904,492**
Interest and Other Deductions:		
Interest on funded debt	$ 5,840,666	$ 6,173,228
Interest on bank loans	141,832	—
Amortization of debt discount, premium and expense	64,593	82,190
Other interest	514,776	9,729
Interest charged to construction—(credit)	(936,143)	(145,696)
Preferred dividends and common stock minority interest in income of Permian Basin Pipeline Company	408,972	400,245
	$ 6,034,696	$ 6,519,696
Net income (Note 1)	**$ 15,170,808**	**$ 14,384,796**
Retained Earnings		
Dividends paid in cash to preferred stockholders of the Company	1,375,002	1,375,002
Common stock equity in net income (Note 1)	**$ 13,795,806**	**$ 13,009,794**
Dividends paid in cash to common stockholders of the Company	$ 8,769,600	$ 7,490,700
Gain on sale of gas plant	—	(173,158)
	$ 8,769,600	$ 7,317,542
Net increase in retained earnings	$ 5,026,206	$ 5,692,252
Retained earnings January 1	33,939,943	28,247,691
Retained earnings December 31 (Note 1)	**$ 38,966,149**	**$ 33,939,943**

The accompanying notes are an integral part of these statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) RATES:

The Company, in July, 1954, filed with the Federal Power Commission an increase in rates which became effective December 27, 1954, and was permitted to be collected under bond subject to possible refund. A settlement of the rate increase became effective June 27, 1956, but, because of litigation on zone rates, the matter of rates and refunds for the period from December 27, 1954, through June 26, 1956, was not settled. During this period approximately $11,316,000 of revenue was collected under bond subject to possible refund. After providing for a voluntary reduction in the level of rates for the year 1955, $9,319,000 has been included in reported gas sales revenues in these financial statements.

If this $9,319,000 collected under bond had been excluded from gas sales revenues for the year 1955 and six months ended June 30, 1956, the following results would have been reported:

	Years Ended December 31, 1956	1955
Net Income	$13,867,000	$11,318,000
Common Stock Equity in Net Income	12,492,000	9,943,000

If rates for the period from December 27, 1954, through June 26, 1956, are finally settled by applying the basis used in determining rates made effective on and after June 27, 1956, the Company estimates that the approximate results would be as follows:

	Years Ended December 31, 1956	1955
Net Income	$14,538,000	$13,069,000
Common Stock Equity in Net Income	13,163,000	11,694,000

The Company, in February, 1957, filed a rate increase with the Federal Power Commission to meet increased cost of service. The requested rate level will provide approximately $6,500,000 additional annual revenues on sales subject to the Commission's jurisdiction.

(2) SUBSIDIARIES AND PRINCIPLES OF CONSOLIDATION:

The consolidated financial statements include the accounts of two wholly-owned subsidiaries, Northern Natural Gas Producing Company and Northern Plains Natural Gas Company (inactive); and one majority-owned subsidiary, Permian Basin Pipeline Company, in which the Company held 1,383,200 shares (83⅔%) of common stock.

All significant intercompany items have been eliminated in consolidation.

(3) CONSTRUCTION AND FINANCING:

To meet construction requirements the Company has borrowed $18,750,000 under a one year stand-by credit agreement for $30,000,000 with banks pending plans for permanent financing.

Commitments under purchase orders for pipe and equipment for future construction to be delivered in 1957 through 1960 amount to approximately $70,000,000.

(4) STOCK OPTION PLAN:

A restricted stock option plan, as approved by the stockholders, became effective on April 28, 1956, under which options for 125,000 shares of the Company's common stock may be granted to officers and key employees of the Company and its subsidiaries. The plan is administered by a committee consisting of three members of the Board of Directors who are neither officers nor employees. The option price must be not less than 95% of the fair market value immediately preceding the granting. Options may be exercised only after two years and within ten years from the date of granting, except in case of death or retirement.

At December 31, 1956, options granted to 140 officers and key employees for 96,050 shares were outstanding with an option price of $40.50 per share for a total of $3,890,025. The fair market value on April 28, 1956, the date the options were granted on these shares, was $42.50 per share or a total of $4,082,125. The balance of 28,950 shares was reserved for options as of December 31, 1956. Prior to December 31, 1956, one other option was granted for 100 shares but later cancelled. No options have become exercisable.

It is planned that when shares are sold through exercise of options the proceeds will be recorded by crediting Common Stock with par value and Premium on Common Stock with the remainder of the option price.

(5) FEDERAL INCOME TAXES:

The companies follow the general practice of the industry in recording intangible well drilling costs as cost of plant and in deducting such costs as expense for income tax purposes. Recorded net income attributable to deducting intangible well drilling costs for income tax purposes approximated $300,000 for 1956 and $333,000 for 1955.

In 1956 a retroactive election was made to use accelerated depreciation on property constructed beginning January 1, 1954, which permits deduction, for Federal income tax purposes, of greater depreciation of the cost of property in the early years and a lesser amount in the later years of its life. This has the effect of deferring payment of a portion of the recorded Federal income tax expense until later years but does not affect recorded net income. Deferred Federal income taxes were $1,206,400 for 1956, $1,312,700 for 1955 and $200,000 for 1954.

(6) RETROACTIVE ADJUSTMENT:

The financial statements for 1955 have been restated to give effect to the return to retained earnings in 1956 of $634,983 of adjustments applicable to prior years and for reclassifications in connection with the election to use accelerated depreciation for Federal income tax purposes. These adjustments do not affect net income recorded in these financial statements.

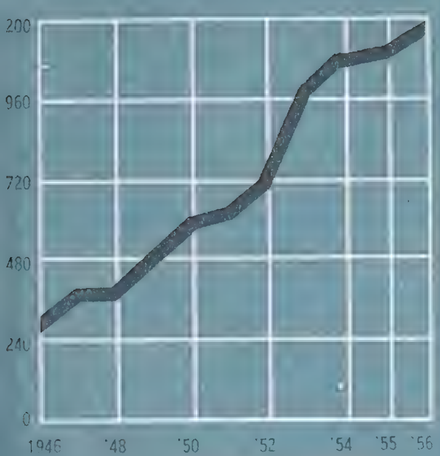
AUDITORS' CERTIFICATE

We have examined the consolidated statement of financial position of NORTHERN NATURAL GAS COMPANY (a Delaware corporation) and subsidiary companies as of December 31, 1956, and the related statement of results of operations and retained earnings for the year 1956. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We had made a similar examination for the preceding year.

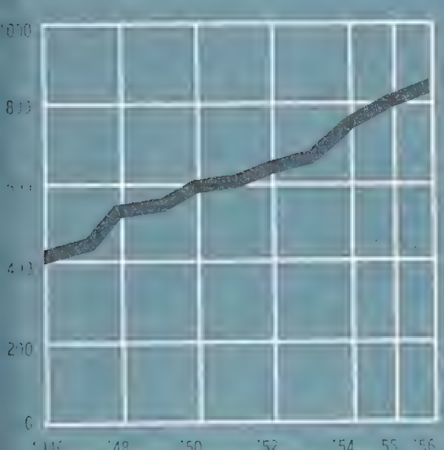
In our opinion, subject to the final determination of the rate matters referred to in Note 1, the accompanying statements of financial position and results of operations and retained earnings present fairly the financial position of the companies at December 31, 1956, and the results of their operations for the year then ended, and were prepared in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Omaha, Nebraska,
February 5, 1957.

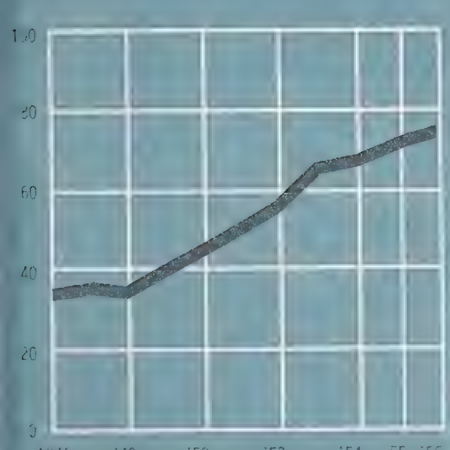
ARTHUR ANDERSEN & CO.



DAILY SALES CAPACITY
MILLIONS OF CUBIC FEET



CONSUMERS SERVED
IN THOUSANDS



HOUSE HEATING SATURATION
PERCENT OF TOTAL CONSUMERS

THIS WAS 1956 . . . .

Sales

WHOLESALE

MARKET CONTINUES TO GROW

Northern Natural Gas Company's market continued to grow during 1956. The increasing demand by the public for premium fuel, the addition of new communities to Northern's system, the high rate of construction of new homes and the influx of new industry all contributed to the company's sales during the year which reached a new high of 326 billion cubic feet. Northern's growth in past years contributed greatly to helping create the important factors which made sales climb during 1956. As the availability of natural gas for industry helped many areas attract new plants they in turn spurred the demands for new housing.

Northern continued to meet all the demands of its presently connected communities. The addition of 28 new communities during the year increased the total on Northern's system to 384. The number of consumers increased by 35,000 bringing the total to 852,000. House-heating customers total 641,000 or 75 percent of total consumers.

The growth of industrial sales, for the first time in many years, exceeded the increase of house-heating sales. This created a better balance between the two and

improved the company's load factor, permitting more efficient use of our transmission facilities.

The Federal Power Commission issued an order on May 20, 1955 requiring Northern to divide its system into three zones with differentials in rates between zones. Seven utility customers of Northern, together with the cities of Minneapolis and St. Paul and the State of Minnesota petitioned the U. S. Court of Appeals, Eighth Circuit to review and reverse the Commission's order. The Circuit Court upheld the Commission's decision and on January 14, 1957 the United States Supreme Court denied petitions to review the lower Court's decision.

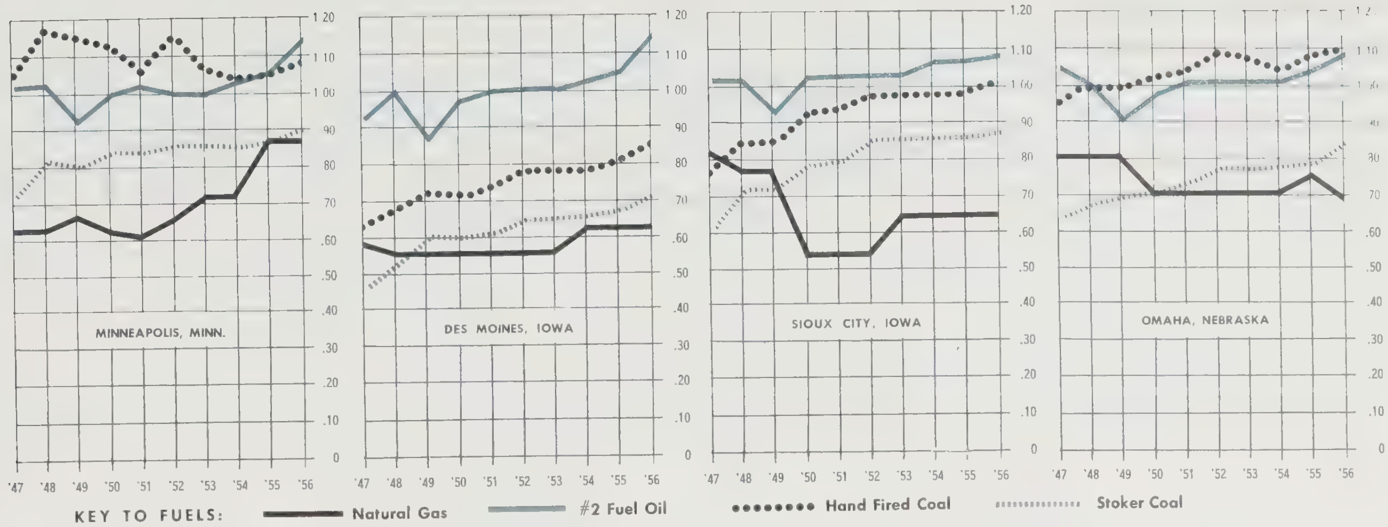
Continuing its efforts to also meet the demands for service to new communities, Northern developed a plan which would provide for the orderly expansion of its facilities to serve additional communities in its market area. In December 1956, Northern informed its utility customers of such a plan, stating that it was willing to apply to the Federal Power Commission for authority to construct and operate the facilities necessary to make service available to 213 communities which meet certain economic requirements. Approximately one-half million persons reside in the 213 communities.

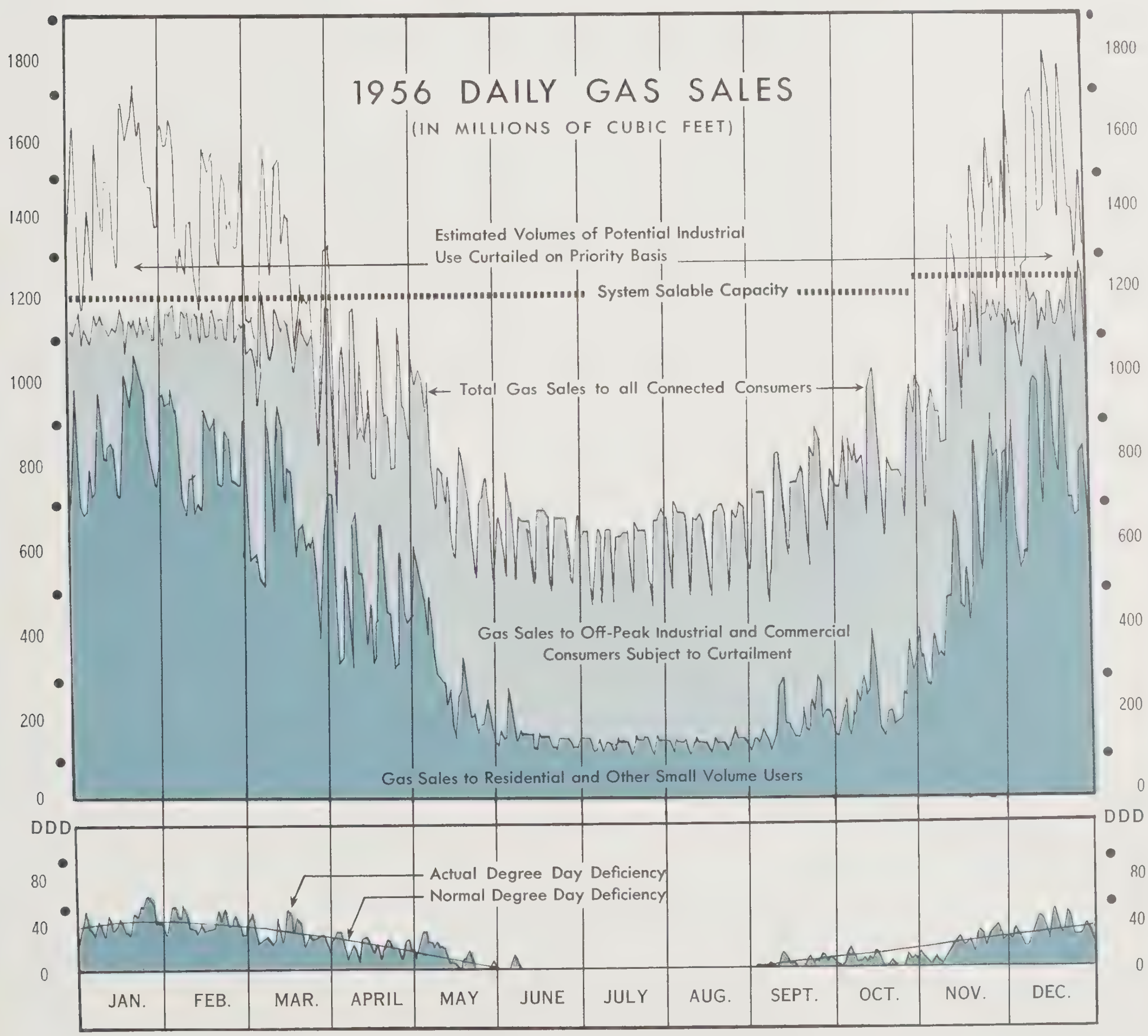
(Continued on page 12)

The Southdale Shopping Center in Minneapolis, the largest shopping center under one roof in the world, was completed in 1956 and uses natural gas supplied by Minneapolis Gas Company, a Northern utility customer. An ideal climate through all seasons is provided by natural gas powering the world's largest heat pump.

RELATIVE COSTS OF VARIOUS HOUSEHEATING FUELS

(IN CENTS PER MILLION BTU'S)





Degree Day Deficiency, reflecting outdoor temperature conditions, is an indication of fuel needed for heating and influences the daily sales.

RETAIL

PEOPLES ADDS SIX COMMUNITIES

Peoples Natural Gas, a division of Northern, distributes gas at retail in 109 communities and 4,200 farms and industries along our lines.

Peoples added six new communities during 1956 with a population of 11,320. These communities, all located in Iowa, are: Rockford, Dyersville, Manchester, Grundy Center, Story City and Kellogg.

Peoples profited from the industrial growth of the Northern Plains in 1956 with the important addition of these new industrial customers:

	Annual Requirements in Thousands of Cubic Feet
Northern States Power Co. (Black Dog Station), St. Paul, Minnesota	20,000,000
Allied Chemical Co. (Additional Requirements), Omaha, Nebraska	4,117,700
St. Paul Ammonia Products, Inc., St. Paul, Minnesota	2,930,000
Great Northern Oil Co., St. Paul, Minnesota	1,730,000
The Maytag Co., Newton, Iowa	742,880
International Business Machines Corp., Rochester, Minn.	280,000
Rockford Brick & Tile Co., Rockford, Iowa	194,264
City of Grundy Center Power Plant, Grundy Center, Iowa	134,240
Great Lakes Pipe Line Co., Faribault, Minn.	80,000
Midwest Metal Stamping Co., Kellogg, Iowa	33,710

The following comparison shows the growth by Peoples in 1956.

	1955	1956
Communities Served	103	109
Sales in thousands of cubic feet	49,821,484	54,021,161
Revenues	$17,990,883	$19,726,273
Space-Heating Customers	62,284	65,227
Domestic Customers	57,122	59,182
Industrial and Commercial Customers	8,366	8,744
Rural Customers	3,406	3,615

Northern States Power Company's Black Dog Power Plant near St. Paul, Minnesota became an industrial gas user in 1956. It joined the ranks of satisfied commercial and domestic customers like the Omar bakery in Omaha and the many modern homes in the Northern Plains.

Gas Supply

GAS RESERVES UP TO 10.3 TRILLION

Proven gas reserves controlled by Northern are at an all-time high and have been estimated as of the end of 1956 to be 10.3 trillion cubic feet. Of this amount 1.9 trillion are owned by Northern Natural Gas Producing Company and 8.4 trillion are controlled by contracts with others. Of the 1.9 trillion cubic feet of proven reserves of Northern Natural Gas Producing Company, 107 billion cubic feet are situated in Montana and Alberta, Canada. In the early part of 1957, new gas purchase contracts were completed with independent operators which resulted in control by the company of approximately 250 billion cubic feet of additional reserves not included in the above figures.

Reserves controlled at the end of 1956 were increased by more than one trillion cubic feet over those controlled at the end of 1955 after allowing for withdrawals of gas in 1956.

Gas purchased and produced in 1956 amounted to 356.5 billion cubic feet compared to 335.9 billion cubic feet in 1955. During 1956, 221.1 billion cubic feet were purchased directly by Northern, 101.2 billion cubic feet were purchased by Permian Basin Pipeline Company and 34.2 billion cubic feet were produced by Northern Natural Gas Producing Company. Northern and Permian purchased 90.4 percent of the total and the Producing Company produced the remaining 9.6 percent.

Gas purchased and produced by fields and areas during the year was as follows:

Field	*Billions of Cubic Feet*		
	Produced	Purchased	Total
Texas Panhandle and Texas Hugoton Fields	6.0	103.4	109.4
Hugoton Field:			
Oklahoma	0	39.7	39.7
Kansas	28.0	72.0	100.0
Permian Basin:			
Texas	0	42.0	42.0
New Mexico	0	59.2	59.2
Other Fields	.2	6.0	6.2
Total	34.2	322.3	356.5

Further information on activities of Northern Natural Gas Producing Company and Permian Basin Pipeline Company may be found under the subsidiary section of this report.

Underground Storage

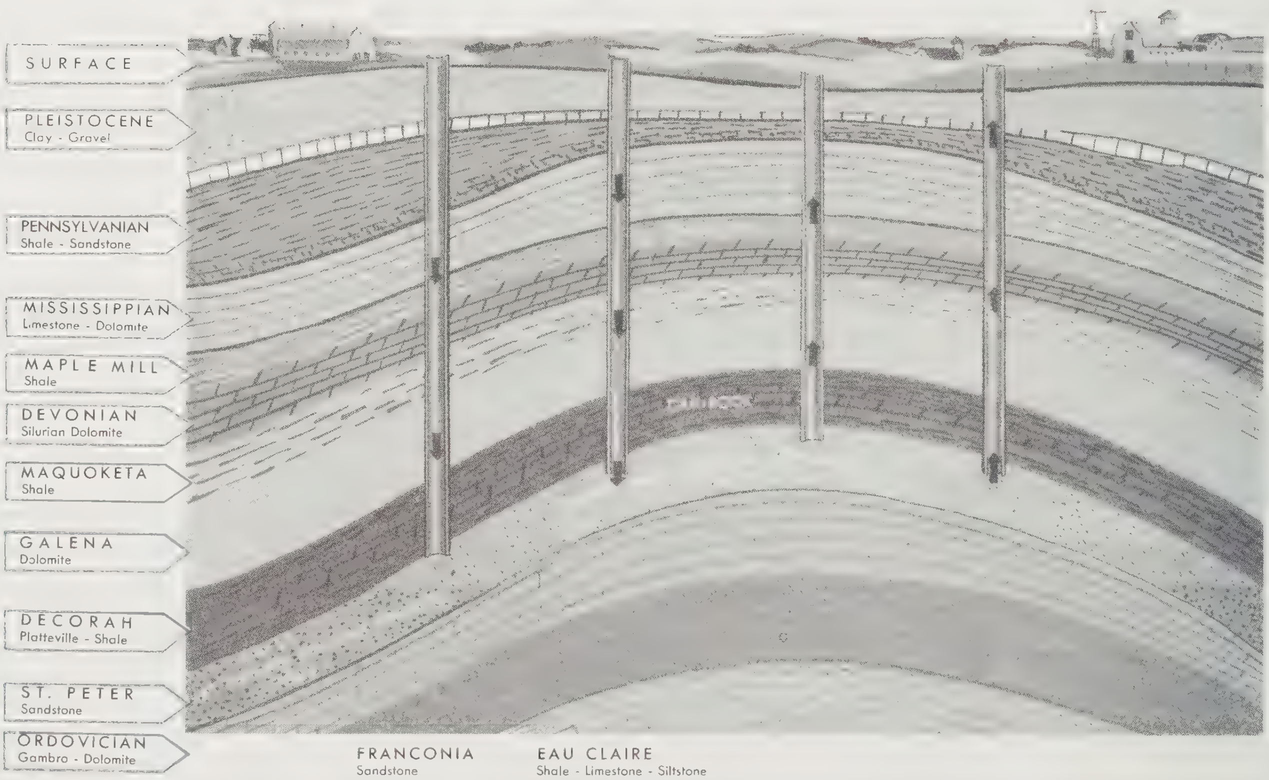
FIELD DEMONSTRATES ABILITY TO DELIVER OVER 40 MILLION PER DAY

The Redfield, Iowa underground storage project already has demonstrated its ability to deliver over 40 million cubic feet of gas per day into the system during peak load periods but testing is still continuing preliminary to permanent use for capacity purposes. During the year Northern constructed thirty miles of 20-inch line, installed a dehydration plant and modified its Ogden compressor station to facilitate large scale testing. Twelve injection-withdrawal wells are connected to the system.

Natural gas has been injected up to 50 million cubic feet per day and the amount of gas now in storage is 5.1 billion cubic feet. The St. Peter Sandstone of this field ultimately should hold 50 billion cubic feet and provide a winter peak-day delivery of about 200 million cubic feet.

To date there has been $6,500,000 invested in the Redfield project. The field when in final operation should provide peak day deliverability that would cost several times as much if provided through additional pipeline and compressor facilities. It is expected that the Federal Power Commission after completion of the hearing will issue a certificate in 1957 for the sale of 50 million cubic feet per day from this storage field.

UNDERGROUND STORAGE STRATA
(CROSS SECTION)



Construction of 163 miles of mainline to Aberdeen, South Dakota was pushed to completion after Northern received Federal Power Commission approval to serve 20 additional South Dakota communities. Ditch digging, welding and lowering in of pipe went on even after cold weather arrived.

System Additions ...Operations

SYSTEM CAPACITY REACHES ONE BILLION 200 MILLION DAILY

Pipeline capacity was increased by 65 million cubic feet per day bringing our total daily capacity at the end of 1956 to about 1.2 billion cubic feet. The program included main line additions of 248 miles, including a 165 mile mainline extension to Aberdeen, South Dakota. Approximately 160 miles of other branch lines were also installed. A total of 20,640 horsepower was added at nine Northern compressor stations.

Employees of our Beatrice, Nebraska compressor station have compiled an enviable safety record of a million man hours without a lost time accident which merited an award from the American Gas Association. This record, established over a seven year period, is still intact. This is the first time that a million man hours without a lost time accident was reached by any of our operating groups.

Finance

CASH FROM OPERATIONS AND BANK LOANS COVER 1956 CONSTRUCTION

The construction program for 1956 totaling approximately $54,000,000 was financed by cash on hand and cash generated from operations amounting to about $24,000,000 together with funds borrowed from banks under a $30,000,000 credit agreement on an interim basis. Refunding of bank loans is proposed in 1957 through issuing debentures of Northern.

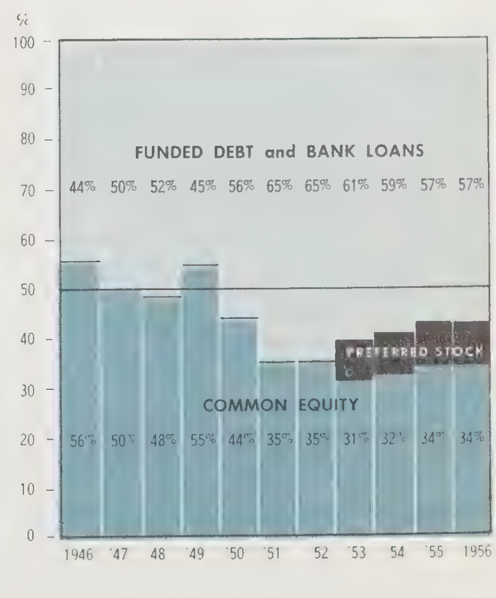
Interim financing for Permian Basin Pipeline Company was arranged through borrowing from Northern on promissory notes having interest rates of 4% and 4¼%. These notes will be repaid as Permian obtains funds from its long term financing in 1957.

During the year debentures for 1956 sinking funds and a major part of the 1957 requirements were acquired at substantial discounts below the sinking fund redemption prices.

Capitalization including bank loans at the end of 1956 was $335,954,822, consisting of approximately 34% of common equity, 9% preferred stock and 57% of funded debt and bank loans.

Market value of Northern's investment in Husky Oil Company (Delaware) and Canadian Husky Oil Ltd., was approximately $2,000,000 at the end of the year compared with a cost to Northern of $1,050,000.

DEBT-EQUITY-RATIO IN PERCENT OF TOTAL CAPITALIZATION



Repayment Schedule of Funded Debt

(Thousands of Dollars)

Repayment Year	Northern—Serial Debentures				Northern—Sinking Fund Debentures			Permian Bonds	Total
	2⅜% Due May 1	2½% Due May 1	3⅛% Due May 1	2⅝% Due May 1	3⅝% Due Nov. 1, 1973	3¼% Due Nov. 1, 1973	3¼% Due Nov. 1, 1974	4½% Due June 1, 1973*	
1957†	$ 1,600	$ 800	$ —	$ 2,000	$ —	$ 400	$ —	$ 1,792	$ 6,592
1958	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1959	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1960	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1961	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1962	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1963	1,600	800	—	2,000	1,000	1,600	1,500	1,792	10,292
1964	1,600	800	—	2,000	1,500	1,600	1,000	1,792	10,292
1965	1,600	800	—	2,000	1,500	1,600	1,000	1,792	10,292
1966	—	1,000	1,000	2,400	1,500	1,600	1,000	1,792	10,292
1967	—	1,000	1,000	2,400	1,500	1,600	1,000	1,792	10,292
1968	—	—	2,000	2,400	1,500	1,600	1,000	1,792	10,292
1969	—	—	2,000	2,400	1,500	1,600	1,000	1,792	10,292
1970	—	—	—	4,400	1,500	1,600	1,000	1,792	10,292
1971	—	—	—	—	1,500	6,000	1,000	1,792	10,292
1972	—	—	—	—	2,500	5,000	1,000	1,595	10,095
1973	—	—	—	—	2,500	5,000	1,000	—	8,500
1974	—	—	—	—	—	—	4,500	—	4,500
Total	$14,400	$9,200	$6,000	$32,000	$23,000	$37,200	$23,500	$28,475	$173,775

† Current Maturities.

* Semi-annual payments of $896,000 due May 31 and November 30 based on current estimates of gas reserves.

Preferred Stock - Par Value $100 per share

(Number of Shares)

	Authorized	Outstanding	Annual Sinking Fund Requirements (at par)
Northern Natural Gas Company	750,000		
5½% Cumulative		250,000	10,000 (Sept. 1)
Permian Basin Pipeline Company	100,000		
5¾% Cumulative		43,225	2,275 (Dec. 31)
Total	850,000	293,225	12,275

Public Relations

FLOW OF INFORMATION TO PUBLICS INCREASES

Northern continued to expand its public relations activities and its flow of information between the company and its various publics. The company is keenly interested in all projects which contribute to industrial and other growth of its market area. During the year, Northern's people increased their participation in such activities and the company identified itself with many new projects.

In 1956 Northern's quarterly publication, "Transmission," circulated to 16,000 civic leaders in our market area, merited the top award from a national editors' association. A new movie about the company entitled "Around the Clock" was released during the year.

Area Development in the Northern Plains

TEMPO OF ECONOMIC DEVELOPMENT INCREASES

The Missouri Basin Development program in the Northern Plains reached a milestone during 1956 with the first unitized operation of the upper Missouri River system of dams. This is designed to assure continuity of water supplies, of which the Northern Plains has an abundance, flood free river bank industrial sites, low-cost river transportation and needed recreational facilities. These important advantages contribute to the increased tempo of industrial and economic development in the Northern Plains.

Large scale expansion plans have been announced and begun among many of the industries in the Northern Plains. Every cement plant located in our area has begun expansion of its production facilities to fill the increased requirements of the area resulting from the construction of new plants and new homes, combined with the new highway program which, in itself, will contribute greatly to the development of our area. Other well-known companies have begun construction of new production facilities in our area with several individual plants opening new job opportunities numbering in the thousands. A recent survey by the company indicates that even the smallest communities in the Northern Plains are actively participating in the accelerating pace of industrial development.

The people of the Northern Plains having recognized the need and benefits of industrial development, are doing something about it. Our area is now nationally recognized as being one of the leaders in the formation of organized development groups. Over 400 development organizations are devoting their efforts to the economic development of their communities and the Northern Plains. 107 Industrial Development Corporations devote their full time activities to this field. Of this number over 30 have established industrial districts containing 11,000 acres which have been developed and are devoted exclusively to industrial sites.

Decline in rural population has been largely offset by gains in metropolitan centers, where we sell the bulk of our gas. A growth in population can be expected as the development of our area gains momentum.

Ads in Time magazine and Transmission, a quarterly publication, are important adjuncts to the public relations program.

The Corporate Family

The Corporate Family is composed of seven directors, eleven officers comprising members of the management board, 18,367 stockholders and 2,832 employees.

Board of Directors

MAX A. MILLER—Omaha, Nebraska . . . Business and agricultural interests; Director of Federal Reserve Bank of Kansas City, Missouri; Union Stock Yards of Omaha; Fairmont Foods Company, Omaha: Bankers Life Insurance Company of Nebraska, Lincoln, Nebraska; and United States Cold Storage Corporation, Chicago, Illinois.

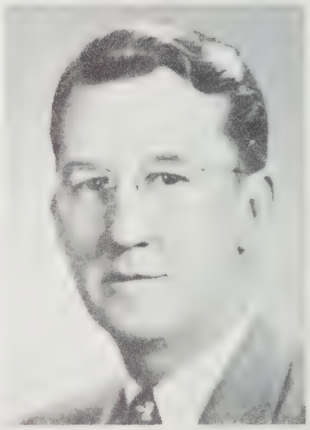
13 YEARS SERVICE

MARK H. ADAMS—Wichita, Kansas . . . Senior partner of law firm of Adams, Jones, Robinson and Manka, Wichita; Director of Independent Natural Gas Association . . . Managing Director and Treasurer of Stevens County Oil and Gas Company, Wichita . . . President and Director of KAKE Broadcasting Company, Inc., and KAKE-TV, Inc., Director of Ortmeyer Lumber Company; Tom Palmer, Inc.; and Grit Printing Company, all of Wichita, Kansas.

8 YEARS SERVICE

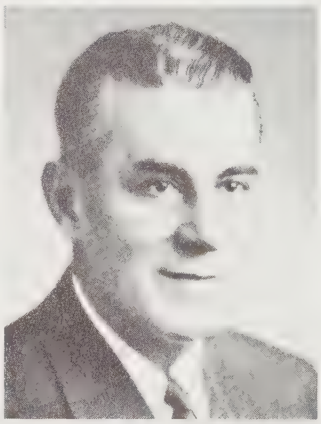
GLENN E. NIELSON—Cody, Wyoming . . . President and a Director of Husky Oil Company, Cody; and of Canadian Husky Oil Ltd., Calgary, Alberta, Canada; Director of the American Petroleum Institute; Member of the National Petroleum Council . . . Chairman of the Board of Gate City Steel Works, Inc., Omaha, Nebraska, and of Gate City Steel, Inc.-Boise in Boise, Idaho; Director of Trans-Tex Drilling Co., Shreveport, Louisiana, and of H. Earl Clack Inc., Cody, Wyoming.

4 YEARS SERVICE



ARTHUR D. HYDE—Minneapolis, Minnesota . . . Vice President in charge of Research, Director, and Administrator of Mechanical and Chemical Activities, of General Mills, Inc., Minneapolis . . . Director of Munsingwear, Inc., Minneapolis, Minnesota, and of A. O. Smith Corp., Milwaukee, Wisconsin.

5 YEARS SERVICE



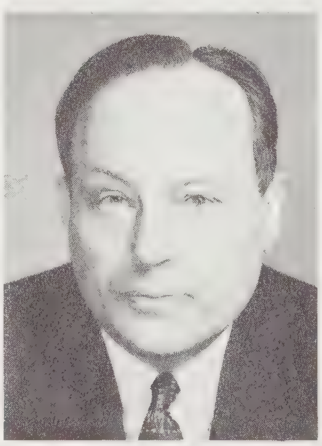
GUY E. REED—Chicago, Illinois . . . Senior Council Chicago Association of Commerce and Industry; Director of Universal Oil Products Company, Chicago; Kawneer Company, Niles, Michigan; Leath & Co., Chicago; American Steel Foundries and Science Research Association, Chicago; Ray-O-Vac Company, Madison, Wisconsin; and Bergstrom Paper Company, Neenah, Wisconsin.

6 YEARS SERVICE

JOHN F. MERRIAM—Omaha, Nebraska . . . President of Company; Director of Independent Natural Gas Association; The United States National Bank of Omaha; Bankers Life Company, Des Moines, Iowa; Fairmont Foods Company, Omaha; and The Calgary & Edmonton Corporation Limited, Winnipeg, Canada; Trustee, Omaha Industrial Foundation, Omaha and University of Chicago.

10 YEARS AS DIRECTOR

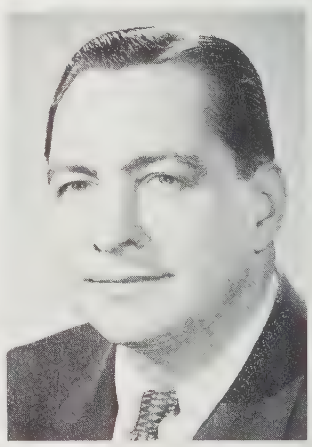
26 YEARS WITH COMPANY



GILBERT C. SWANSON—Omaha, Nebraska . . . President of C. A. Swanson & Sons, Omaha; Vice President of Campbell Soup Company, Camden, New Jersey; Director of Northwestern Bell Telephone Company, Omaha; Merchants Refrigerating Co., New York, N. Y.; Trustee Omaha Industrial Foundation, Omaha, and Shattuck School, Faribault, Minnesota.

BECAME A DIRECTOR

JANUARY 1, 1957



Management Board

ELEVEN OFFICERS

The Management Board of the company functions as an internal board of directors, consisting of the President, who serves as chairman, seven Vice Presidents, Secretary, Treasurer and General Counsel. The board meets daily to decide matters that require top management decisions.

Stockholders

STOCKHOLDERS APPROVE STOCK OPTION

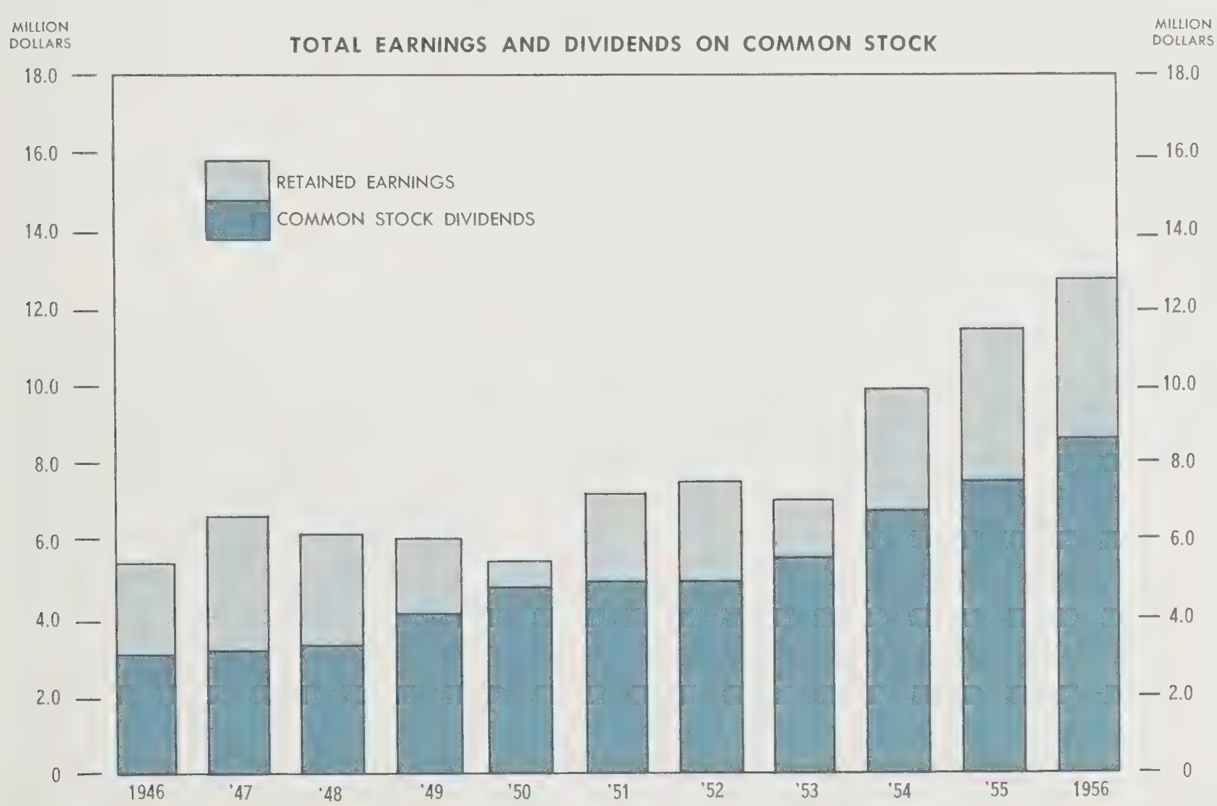
The company had 18,367 stockholders of record on December 31, 1956, no one of which owned more than 3% of the outstanding common capital stock. About ten percent of these stockholders are employees of the company, representing over 60% of Northern's employees.

Northern stockholders reside in each of the 48 states, Canada, England, Mexico, Switzerland, Bermuda, Republic of Panama, Ireland, Greece, Netherlands, Japan, Hawaii, Puerto Rico, Alaska and the Virgin Islands.

There are 3,654,000 shares of stock outstanding and it is listed on the New York Stock Exchange.

During the year stockholders approved a restricted stock option plan, covering

(*Continued on page 20*)



Stockholders ... *Continued*

125,000 shares of common stock, for officers and key employees of the company and its subsidiaries. Options granted on April 28, 1956 for a total of 96,050 shares are outstanding. The options may be exercised, in whole or in part, at any time between April 28, 1958 and April 28, 1966.

Employees

BENEFIT PLANS BROADENED

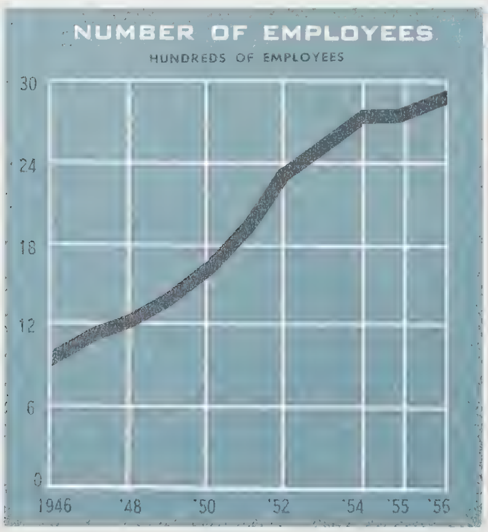
All of Northern's 2,832 people combined their skills and talents to carry on our 1956 program.

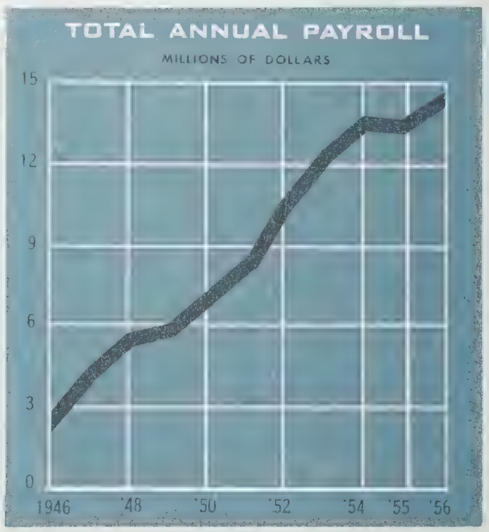
Thirty employees passed their twenty-fifth year of service with the 26-year old company bringing the total to 51. Service awards were also presented to 98 employees for 20 years service and 170 for 15 years. 22 percent of the employees have been with the company 10 years or longer.

The employees stock purchase plan approved by the stockholders last year was met with enthusiastic employee participation. A total of 1,634 employees, 68 percent, are in the plan. The trustee has purchased 6,167 shares for the accounts of the employees on the open market in the seven months the plan has been in effect.

Employee benefit plans were reviewed during the year resulting in the addition of an extension of life insurance coverage for better coordination with the retirement income plan and expansion of the vacation policy. Other employee benefits are retirement income, medical expense, stock purchase, paid sick time, holidays, tuition reimbursement, social and athletic activities.

During the year the company was unfortunate in losing one of its veteran department heads, Frank Martin, who died suddenly in February. Mr. Martin had been with the company from its start and served as Purchasing Agent for more than twenty-five years. Hugh Pendley, who has been with the company since 1935, in various operating capacities, was promoted to fill the Purchasing Agent position.



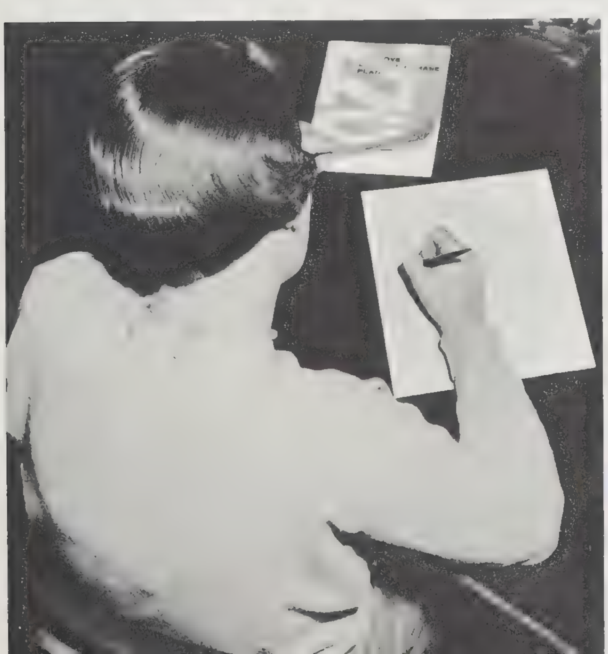


VIEWS OF 1956

Construction of additional facilities was begun in 1956 at Permian Basin Pipeline Company's Hobbs, New Mexico compressor station and gasoline plant. The towers and yard piping make the Hobbs station one of the most attractive on our system.

Aberdeen, South Dakota with a population of 24,500 was one of 28 communities added to Northern's system. Northwestern Public Service Company is the distribution utility in Aberdeen.

Beatrice, Nebraska Compressor Station Superintendent John Stewart receives a special company plaque from President John Merriam which supplemented an American Gas Association award in recognition of the Beatrice employees' record of a million man hours worked without a lost-time injury.



To establish a simple means of aiding long range savings and to provide additional job incentive, Northern in 1956 put into effect the Employee Stock Purchase Plan.

Financial Position

Assets

	December 31, 1956	December 31, 1955
Gas Plant, at original cost	$13,281,895	$11,367,552
Less: Reserves for depreciation and depletion	1,994,648	1,820,841
	$11,287,247	$ 9,546,711
Current Assets:		
Cash	$ 287,348	$ 621,014
Receivables from Northern Natural Gas Company	503,322	462,358
Other receivables	23,539	5,722
Materials and supplies, at average cost	309,136	140,352
Prepayments	3,327	1,397
	$ 1,126,672	$ 1,230,843
Deferred Charges	$ 78,664	$ 98,637
	$12,492,583	**$10,876,191**

Liabilities and Capital

	December 31, 1956	December 31, 1955
Common Stock—authorized 8,000,000 shares, par value $1 per share; 7,029,315 shares outstanding (all held by Northern Natural Gas Company)	$ 7,029,315	$ 7,029,315
Retained Earnings	4,836,573	3,548,567
Total capitalization	$11,865,888	$10,577,882
Current Liabilities:		
Note payable to Northern Natural Gas Company	$ 200,000	$ —
Accounts payable	343,618	240,281
Accrued taxes	52,399	38,007
	$ 596,017	$ 278,288
Insurance Reserves	$ 30,678	$ 20,021
	$12,492,583	**$10,876,191**

Results of Operations and Retained Earnings

Operations

	Years Ended December 31, 1956	Years Ended December 31, 1955
Operating Revenues:		
Gas sales to Northern Natural Gas Company	$3,587,857	$3,298,907
Gas sales to others	15,303	16,670
Other	3,817	3,740
	$3,606,977	$3,319,317
Operating Expenses and Taxes:		
Operation	$1,961,028	$1,551,330
Maintenance	5,490	54,796
Depreciation	22,200	18,500
Depletion	151,000	137,000
Taxes, other than taxes on income	118,140	109,880
Taxes on income	59,200	10,300
	$2,317,058	$1,881,806
Net operating income	**$1,289,919**	**$1,437,511**
Other Income	2,893	—
Gross income	**$1,292,812**	**$1,437,511**
Interest Deductions:		
Interest to Northern Natural Gas Company	$ 1,327	$ 5,250
Other interest	3,479	65
	$ 4,806	$ 5,315
Net income	**$1,288,006**	**$1,432,196**

Retained Earnings

	1956	1955
Retained earnings January 1 (Restated)	3,548,567	2,116,371
Retained earnings December 31	**$4,836,573**	**$3,548,567**

PRODUCING COMPANY IN 1956

The operations of Northern Natural Gas Producing Company, a wholly-owned subsidiary, consist of the exploration for and the production of gas and oil.

Gross revenue reached an all time high of \$3,606,977, derived predominantly from sales of gas to the parent company.

Net earnings for the year were \$1,288,006 which amounted to \$.35 per share of the parent company's issued common stock. Net earnings for 1956 were less than for 1955 principally because \$228,315 in dry holes was written off as compared to \$2,869 in 1955. Another contributing factor was that \$200,303 in leases were surrendered in 1956 as compared to \$153,048 in 1955.

Lease holding reached an all time high of 1,087,848 acres with the acquisition of 285,959 acres during the year.

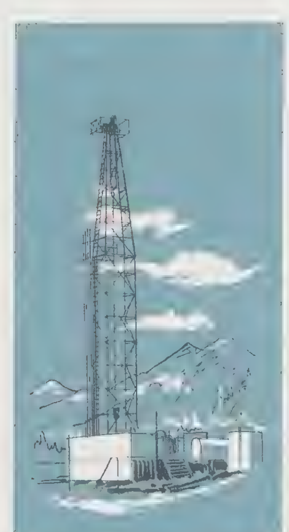
Producing Company acquired 160 acres in 1955 and another 160 acres in 1956 in the Westward Ho oil field in Canada.

Well Drilling

In 1956 32.125 net wells were drilled of which 30.625 were producers and 1.5 were dry holes. The producers consisted of 29.625 gas wells in the Hugoton field of Kansas and one oil well in the Westward Ho field of Alberta.

In the Savanna Creek field in Alberta, Canada, three wells are considered proven for the production of gas as they have penetrated the gas producing formation. The Producing Company has a 32.5% ownership in the Savanna Creek Field and it is proposed to drill three additional wells in this field in 1957. Estimated reserves appear to be substantial.

The Producing Company conducted the biggest well drilling program in the history of the Company during 1956 by drilling or contributing to the drilling of 32.1 net wells of which 30.6 were producers.



Financial Position

	December 31, 1956	December 31, 1955
Assets		
GAS PLANT, at original cost	$54,765,147	$44,597,036
Less: Reserve for depreciation	4,930,368	3,372,632
	$49,834,779	$41,224,404
CURRENT ASSETS (including receivables from Northern Natural Gas Company of $1,302,067 and $1,116,559 for 1956 and 1955 respectively)	4,803,504	3,809,567
DEFERRED CHARGES	312,006	361,615
	$54,950,289	**$45,395,586**
Liabilities and Capital		
COMMON STOCK—authorized 3,000,000 shares, par value $1 per share; 1,653,000 shares outstanding (83⅔% held by Northern Natural Gas Company)	$ 1,653,000	$ 1,653,000
PREMIUM ON COMMON STOCK, less common and preferred stock expense	5,137,202	5,137,202
RETAINED EARNINGS	2,219,006	1,646,857
Total common stock equity	$ 9,009,208	$ 8,437,059
PREFERRED STOCK	4,322,500	4,550,000
FUNDED DEBT	28,475,000	30,267,000
Total capitalization	$41,806,708	$43,254,059
Less current redemption requirements	2,019,500	2,019,500
Total capitalization, less current redemption requirements	$39,787,208	$41,234,559
CURRENT LIABILITIES:		
Redemption requirements of preferred stock and funded debt	$ 2,019,500	$ 2,019,500
Notes payable to Northern Natural Gas Company	9,300,000	—
Other	3,242,888	1,762,434
	$14,562,388	$ 3,781,934
OTHER CREDITS	$ 600,693	$ 379,093
	$54,950,289	**$45,395,586**

Results of Operations and Retained Earnings

	Years Ended December 31, 1956	Years Ended December 31, 1955
Operations		
OPERATING REVENUES:		
Gas sales to Northern Natural Gas Company	$15,418,602	$13,396,976
Other	3,343,407	2,773,711
	$18,762,009	$16,170,687
OPERATING EXPENSES AND TAXES:		
Gas purchased	$10,519,123	$ 8,322,783
Operation and maintenance	2,311,258	2,153,440
Depreciation	1,948,000	1,872,100
Taxes, other than taxes on income	279,163	270,246
Taxes on income	1,211,900	1,020,400
	$16,269,444	$13,638,969
Net operating income	**$ 2,492,565**	**$ 2,531,718**
OTHER INCOME	14,792	13,355
Gross income	**$ 2,507,357**	**$ 2,545,073**
INTEREST DEDUCTIONS (including $83,003 of interest to Northern Natural Gas Company during 1956)	1,342,983	1,434,167
Net income	**$ 1,164,374**	**$ 1,110,906**
Retained Earnings		
Dividends paid in cash to preferred stockholders	261,625	261,625
Common stock equity in net income	**$ 902,749**	**$ 849,281**
Dividends paid in cash to common stockholders	330,600	82,650
Net increase in retained earnings	$ 572,149	$ 766,631
Retained earnings January 1	1,646,857	880,226
Retained earnings December 31	**$ 2,219,006**	**$ 1,646,857**

PERMIAN IN 1956

This company, an 84% owned subsidiary of Northern, continued its principal function of contracting for supplies of natural gas in the Permian Basin area of West Texas and Southeastern New Mexico and gathering, transmitting and selling this gas to Northern.

Proven gas reserves at the end of 1956 are estimated to be 2.9 trillion cubic feet compared with 2.5 trillion at the end of 1955 after allowing for withdrawals of gas in 1956.

Plans have been formulated to increase Permian's capacity for sales to Northern from 300 million to 375 million cubic feet per day in 1957.

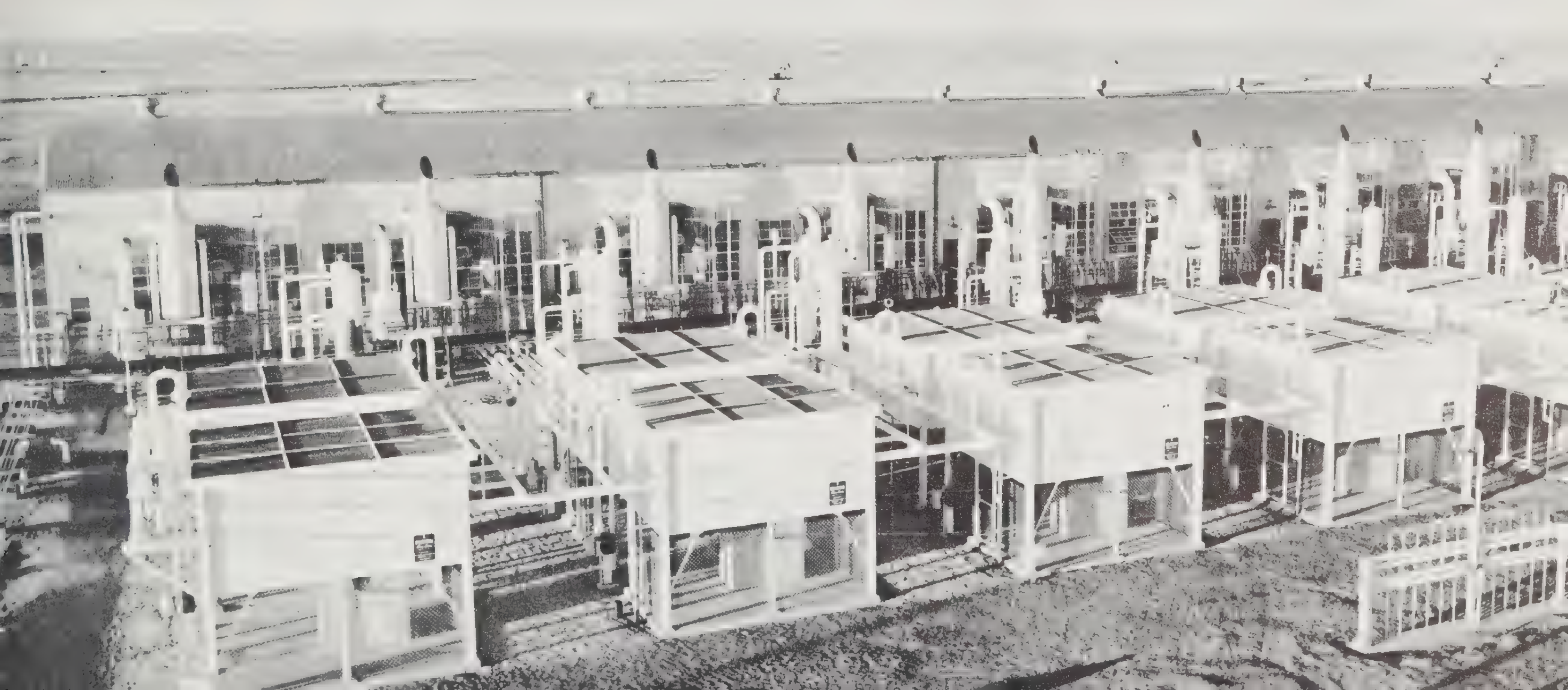
During 1956, Permian's construction of the new Andrews Compressor Station consisting of 10 compressor engines totaling 13,500 horsepower and a dehydration plant was completed.

Permian began construction of an additional 80 million cubic feet per day of gas treating facilities in the Puckett Field of Pecos County, Texas and an additional 50 million cubic feet per day of treating, extracting and dehydrating facilities at its Hobbs, New Mexico plant. Permian also extended its gathering facilities to 70 new wells in Lea County, New Mexico.

Permian's net income for 1956 amounted to $1,164,374. Northern's interest in these earnings amounted to 21¢ per share of its issued common stock. Permian paid 20c per share as dividends on its common stock during 1956.

Gas sold in 1956 was 98.1 billion cubic feet which compares with 76.1 billion cubic feet in 1955.

Installation of ten compressor engines at Permian Basin Pipeline Company's Andrews County, Texas station was completed in 1956. These engines are used to boost casinghead residue gas which is produced with oil from many fields in Andrews County.



HISTORICAL SUMMARY

Year	Volume of Sales (in MCF)	Operating Revenues (in Thousands)	Operating Expenses and Taxes (in Thousands)	Preferred Stock Dividends (in Thousands)	Earned on Common Stock		Common Stock Dividends		Shares of Common Stock Outstanding* (in Thousands)	Retained Earnings (in Thousands)
					Total (in Thousands)	Per Share*	Total (in Thousands)	Per Share*		
1930	1,011,869	$ 287	$ 237	$ —	$ 286	$ .29	$ —	$ —	1,000	$ 286
1931	8,189,154	1,793	1,784	—	(32)	(.02)	—	—	2,000	254
1932	16,248,800	3,634	2,661	—	47	.02	—	—	2,000	302
1933	22,945,565	5,051	3,381	—	532	.26	300	.15	2,030	534
1934	29,428,151	6,356	4,516	—	746	.37	—	—	2,030	1,280
1935	35,413,769	7,896	5,110	15	1,911	.94	1,624	.80	2,030	1,567
1936	40,102,157	9,038	6,025	—	2,194	1.08	1,827	.90	2,030	1,934
1937	42,994,213	9,775	6,117	—	2,862	1.41	2,233	1.10	2,030	2,563
1938	44,018,951	9,960	6,442	—	2,686	1.32	2,233	1.10	2,030	2,970
1939	49,993,816	11,194	6,877	—	3,618	1.78	2,842	1.40	2,030	2,845
1940	55,873,808	12,857	8,507	—	3,708	1.83	2,842	1.40	2,030	3,711
1941	59,822,658	13,852	9,904	—	3,347	1.65	2,639	1.30	2,030	3,612
1942	68,052,015	15,629	11,569	—	3,461	1.70	2,335	1.15	2,030	4,713
1943	74,671,379	15,363	11,249	—	3,546	1.75	2,030	1.00	2,030	6,166
1944	79,664,419	16,061	11,769	—	3,764	1.85	2,182	1.08	2,030	7,742
1945	82,951,401	17,178	12,481	—	4,206	2.07	2,538	1.25	2,030	8,912
1946	93,108,674	19,369	13,514	—	5,446	2.68	3,045	1.50	2,030	11,314
1947	110,623,704	23,572	16,524	—	6,557	3.23	3,248	1.60	2,030	14,623
1948	133,574,946	26,849	19,824	—	6,329	3.12	3,654	1.80	2,030	17,298
1949	148,951,484	29,296	22,611	—	6,064	2.49	4,202	1.80	2,436	18,661
1950	167,253,515	32,988	25,825	—	5,845	2.13	4,796	1.80	2,741	19,711
1951	199,453,920	44,824	35,953	—	6,977	2.55	4,933	1.80	2,741	21,660
1952	222,488,146	55,234	44,925	—	7,789	2.84	4,933	1.80	2,741	24,509
1953	242,886,404	63,333	52,610	367	7,287	2.22	5,673	1.80	3,289	26,123
1954	273,088,117	89,240	72,519	1,375	10,102	2.76	6,778	1.95	3,654	28,248
1955	303,520,708	107,539	86,854	1,375	11,694**	3.20**	7,491	2.05	3,654	33,940
1956	326,091,203	113,010	92,084	1,375	13,163**	3.60**	8,770	2.40	3,654	38,966

*Adjusted to present $10 par value Common Stock.

**Company estimate - by applying the rate settlement basis effective June 27, 1956 to the year 1955 and six months ended June 30, 1956.

NORTHERN NATURAL GAS COMPANY AND SUBSIDIARIES

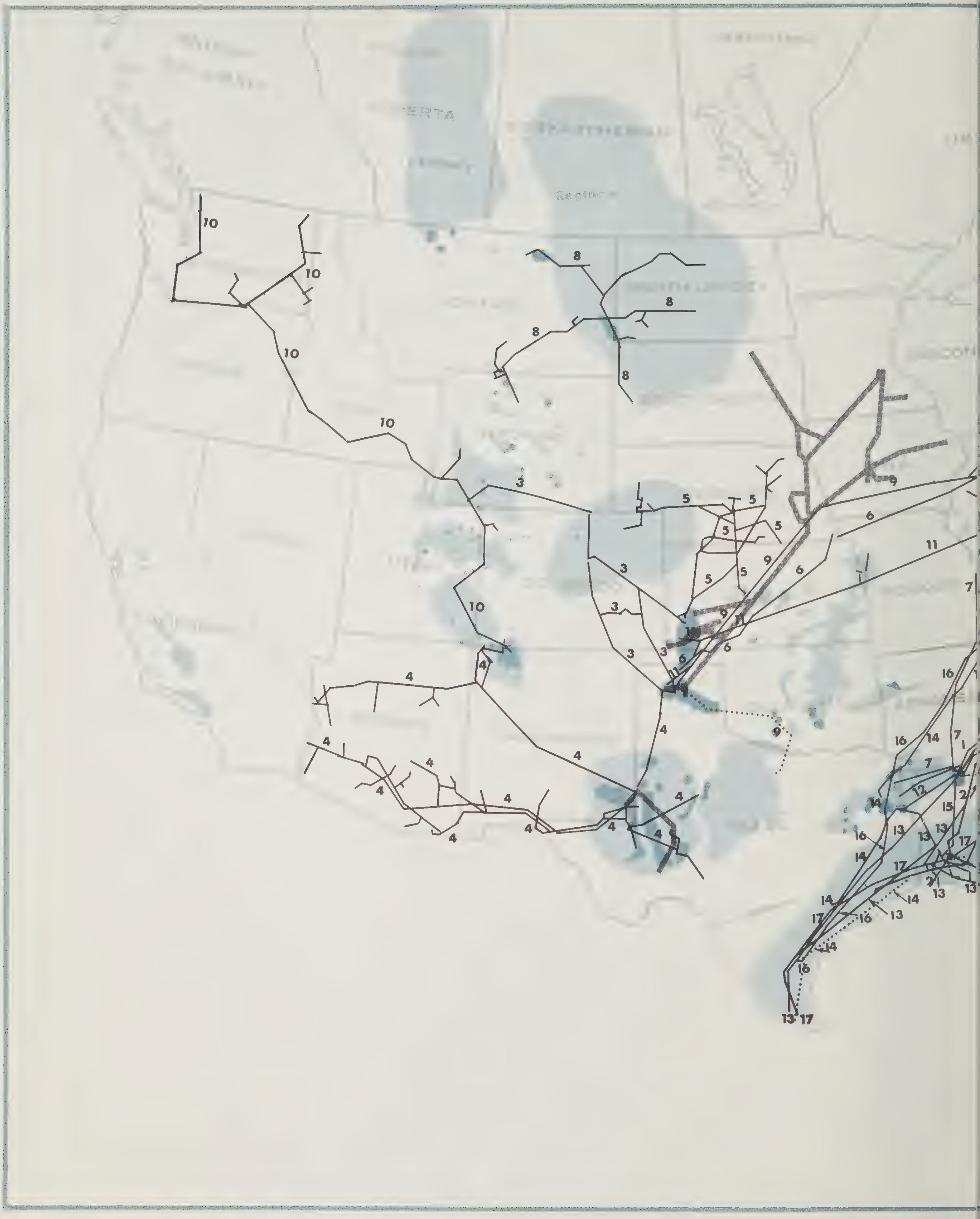
YEARS ENDING DECEMBER 31

Common Stock Equity		Funded Debt (in Thousands)	Total Capital-ization (in Thousands)	Gross Property (in Thousands)	Net Property (in Thousands)	Miles of Pipeline	Installed Horse-power	System Salable Capacity (in MMCF)	Number of Communities Served	Population Served (in Thousands)	Year
Total (in Thousands)	Per Share*										
$ 10,286	$10.29	$ —	$ 10,286	$ 20,053	$ 19,984	661.0	5,500	20	44	188	1930
17,254	8.63	—	17,254	33,458	33,121	1,806.0	13,200	52	114	502	1931
19,275	9.64	—	19,275	35,683	35,079	2,002.0	13,200	114	147	679	1932
19,807	9.76	—	20,413	37,835	36,646	2,100.0	16,000	130	154	704	1933
20,576	10.14	—	21,159	38,364	35,936	2,124.0	19,100	142	162	1,395	1934
20,997	10.34	16,000	37,045	39,424	35,792	2,136.0	28,350	148	168	1,404	1935
21,418	10.55	17,300	38,742	41,816	36,969	2,245.0	35,050	157	170	1,405	1936
22,056	10.87	15,718	37,774	44,341	38,125	2,339.0	40,900	174	174	1,424	1937
22,463	11.07	17,146	39,609	45,910	38,196	2,468.0	41,850	186	178	1,433	1938
22,338	11.00	22,000	44,338	50,908	41,714	2,878.2	43,250	199	208	1,489	1939
23,204	11.43	21,000	44,204	54,064	43,201	3,031.5	51,050	222	220	1,654	1940
23,912	11.78	20,000	43,912	56,386	43,728	3,808.6	56,650	244	224	1,657	1941
25,013	12.32	19,000	44,013	57,028	42,459	3,824.2	58,900	250	227	1,963	1942
26,466	13.04	18,000	44,466	58,649	41,983	3,862.2	60,510	250	227	1,963	1943
28,042	13.81	17,000	45,042	60,722	42,057	3,891.6	68,210	250	227	1,963	1944
29,212	14.39	25,000	54,212	64,736	44,105	4,005.1	71,010	276	227	1,963	1945
31,614	15.57	25,000	56,614	74,835	52,125	4,301.5	71,010	322	234	1,986	1946
34,923	17.20	35,000	69,923	90,283	65,445	4,678.1	114,910	403	239	1,997	1947
37,598	18.52	41,000	78,598	102,627	75,086	4,852.7	130,510	437	242	2,010	1948
50,853	20.88	41,000	91,853	117,577	87,856	5,163.5	144,540	489	249	2,033	1949
61,417	22.41	79,500	140,917	166,097	133,447	6,176.3	183,360	612	255	2,379	1950
63,366	23.12	78,000	141,366	213,775	176,008	6,706.4	248,800	674	258	2,383	1951
66,215	24.16	76,500	142,715	231,791	186,013	7,008.6	260,440	734	263	2,393	1952
86,015	26.16	172,166	284,294	315,868	263,488	8,302.3	407,480	1,007	269	2,408	1953
101,919	27.89	192,621	325,342	371,903	308,168	9,723.0	432,200	1,100	349	2,696	1954
107,611	29.45	184,417	322,955	381,966	305,781	10,175.8	436,200	1,130	349	2,696	1955
112,637	30.83	173,775	317,205	426,434	337,651	10,767.6	467,830	1,196	384	2,820	1956

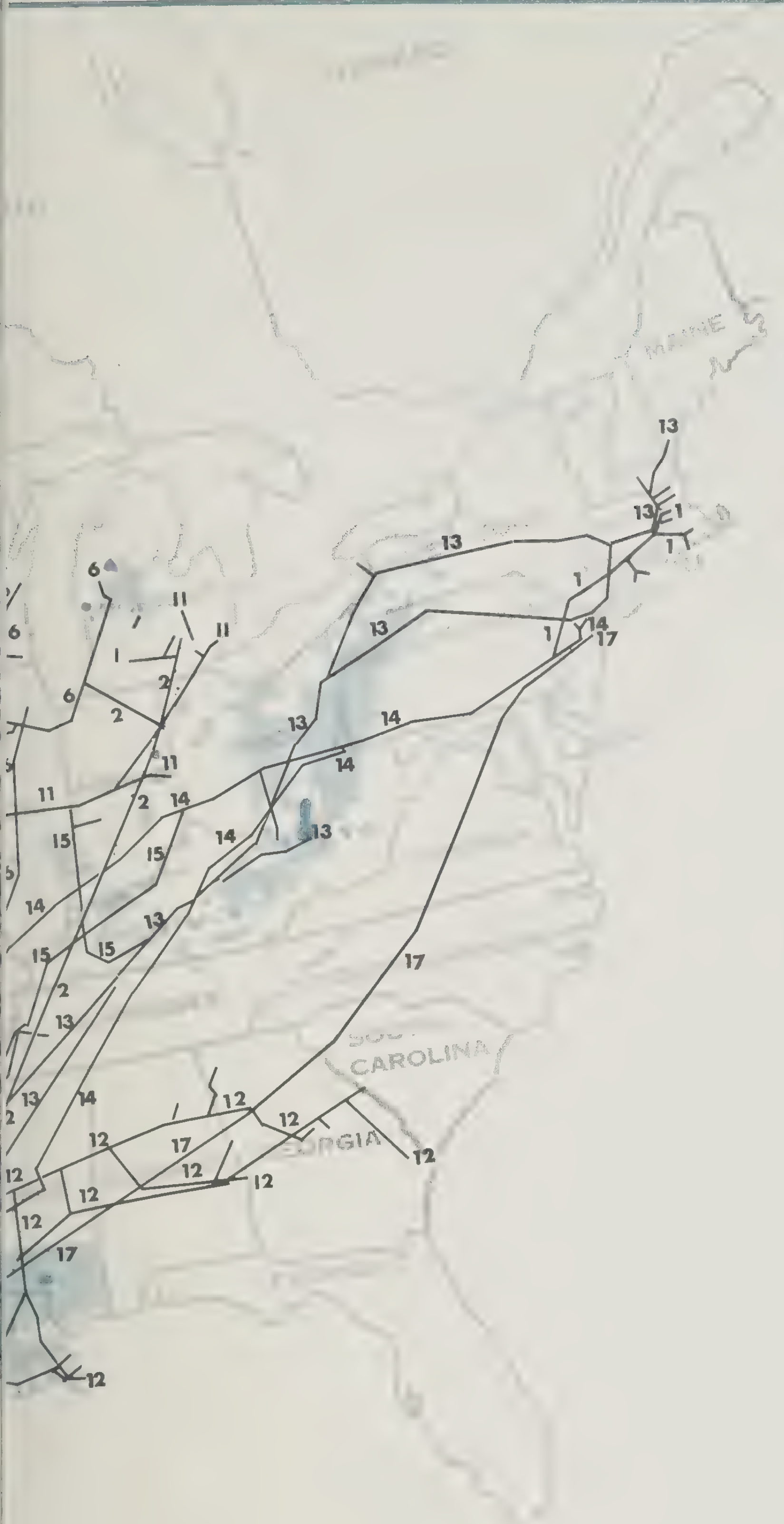
ANNUAL MEETING OF STOCKHOLDERS

THE 1957 ANNUAL MEETING OF STOCKHOLDERS WILL BE HELD ON MARCH 22, 1957 IN OMAHA, NEBRASKA. INFORMATION WITH RESPECT TO SUCH MEETING IS CONTAINED IN THE PROXY MATERIAL WHICH IS ENCLOSED HEREWITH. THIS ANNUAL REPORT IS NOT TO BE DEEMED A PART OF SUCH PROXY SOLICITING MATERIAL.

FOLD
OUT
SYSTEM
MAP



LIFT UP FOR



MAP OF UNITED STATES SHOWING LOCATION OF NORTHERN'S PIPELINES IN RELATION TO OTHER PIPELINES

Northern's system

Generalized area of natural gas supply

Major sources of natural gas supply

Other Natural Gas Pipelines

Existing lines

Certificated or under construction

1 Algonquin Gas Transmission Company
2 American-Louisiana Pipe Line Company
3 Colorado Interstate Gas Company
4 El Paso Natural Gas Company
5 Kansas-Nebraska Natural Gas Company
6 Michigan-Wisconsin Pipe Line Company
7 Mississippi River Fuel Corporation
8 Montana-Dakota Utilities Company
9 Natural Gas Pipeline Company of America
10 Pacific Northwest Pipeline Corporation
11 Panhandle Eastern Pipe Line Company
12 Southern Natural Gas Company
13 Tennessee Gas Transmission Company
14 Texas Eastern Transmission Corporation
15 Texas Gas Transmission Corporation
16 Texas Illinois Natural Gas Pipe Line Company
17 Transcontinental Gas Pipe Line Corporation

YSTEM MAP

NORTHERN NATURAL GAS COMPANY
SYSTEM MAP
LEGEND
Main Lines and Branch Lines
Lines owned by Subsidiary, Permian Basin Pipeline Company
Connecting Lines owned by others
Compressor Stations
Compressor Stations owned by Subsidiary
Compressor Stations owned by others
Gasoline Plants
Communities Served by Peoples Natural Gas Division
Communities Served by Utility customers
Gas fields
Northern Plains Area
SCALE IN MILES
0 50 100 150 200
Date January 1957
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
WYOMING
NEBRASKA
IOWA
ILLINOIS
COLORADO
KANSAS
OKLAHOMA
NEW MEXICO
TEXAS
Billings
Bismarck
Grand Forks
Fargo
Moorhead
Duluth
Superior
MESABI IRON RANGE
Aberdeen
Watertown
Huron
Pierre
Mitchell
Sioux Falls
MINNEAPOLIS
ST. PAUL
RED WING
Eau Claire
Wausau
MANKATO
FARIBAULT
OWATONNA
ROCHESTER
Winona
La Crosse
AUSTIN
ALBERT LEA
MASON CITY
CHARLES CITY
Madison
Milwaukee
Chicago
CEDAR FALLS
WATERLOO
DUBUQUE
FT. DODGE
SIOUX CITY
BOONE
AMES
MARSHALLTOWN
NEWTON
DES MOINES
REDFIELD STORAGE AREA
OMAHA
FREMONT
LINCOLN
BEATRICE
Cheyenne
Platte River
Peoria
Springfield
Denver
Colorado Springs
Topeka
Kansas City
St. Louis
GARDEN CITY
DODGE CITY
Wichita
HUGOTON GAS FIELD
Tulsa
Oklahoma City
Amarillo
TEXAS PANHANDLE GAS FIELD
Albuquerque
El Paso Natural Gas Co.
Red River
Hobbs
Midland
SPRABERRY FIELD
PUCKETT GAS FIELD
Dallas
Fort Worth
Austin
ROCKY MOUNTAINS
PACIFIC OCEAN
Edmonton
Calgary
Lake Winnipeg
Winnipeg
Aberdeen
Minneapolis
St. Paul
Sioux Falls
Sioux City
Milwaukee
Dubuque
Chicago
Omaha
Lincoln
Des Moines
Detroit
Lake Michigan
GULF OF MEXICO
LEGEND
Pipe Line System
Northern Plains Area
Gas Field
0 200 400
SCALE IN MILES

Northern
NATURAL GAS